UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF LOUISIANA

IN RE: OIL SPILL BY THE OIL RIG *DEEPWATER HORIZON* IN THE GULF OF MEXICO ON APRIL 20, 2010	*	Docket 10-MD-2179 Section J
Applies to:	*	New Orleans, Louisiana
Docket 10-CV-02771, *IN RE: THE COMPLAINT AND PETITION OF TRITON ASSET LEASING GmbH, et al*	*	February 25, 2013
Docket 10-CV-4536, *UNITED STATES OF AMERICA v. BP EXPLORATION & PRODUCTION, INC., et al*	*	

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DAY 1, AFTERNOON SESSION
TRANSCRIPT OF NONJURY TRIAL
BEFORE THE HONORABLE CARL J. BARBIER
UNITED STATES DISTRICT JUDGE

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I N D E X

01:09 **AFTERNOON SESSION**

01:09 **(February 25, 2013)**

01:33 **THE DEPUTY CLERK:** All rise.

01:35 **THE COURT:** Please be seated, everyone.

01:35 I think Halliburton is up next. Mr. Godwin.

01:35 **MR. GODWIN:** Yes, Your Honor. Thank you very much.

01:35 Your Honor, I am Don Godwin on behalf of
01:35 Halliburton. And I, as well as the other lawyers who have
01:35 spoken to you today, would like to express the appreciation of
01:35 myself, my team, and my client for all that you, Judge Shushan,
01:35 and your respective staffs have done to bring this case to this
01:35 point to allow all of us to come in here and share with you our
01:35 thoughts and what ultimately, over the next several weeks or
01:35 months, will be the evidence from the witness stand in helping
01:36 you decide or come to a decision or series of decisions about
01:36 what happened leading up to that fatal day of April 20, 2010.

01:36 Your Honor, this case is about a loss of well
01:36 control and BP's attempts to blame Halliburton and others for
01:36 BP's misconduct. Mr. Mike Underhill said it very succinctly
01:36 when he said, "BP blaming Halliburton is disingenuous." You've
01:36 heard other lawyers say, including the Transocean lawyer --
01:36 Mr. Brad Brian said that BP is attempting to blame others for
01:36 its misconduct.

01:36 Judge, BP and Transocean failed to maintain well
01:36 control. Some examples of that are BP failed to confirm zonal

01:36 isolation. Cement is never a barrier until tested. You will
01:36 recall Mr. Roy saying that the cement should have provided a
01:37 barrier to flow. Obviously you have to test it before you can
01:37 rely upon it to be a barrier. You will hear witnesses say that
01:37 as I go through my opening remarks here, Your Honor.
01:37 BP and Transocean misinterpreted the negative
01:37 tests. There were two of them, Your Honor. BP and Transocean
01:37 displaced the well, causing hydrocarbons to enter a breach in
01:37 the casing. Transocean, Your Honor, failed to timely or
01:37 properly respond to the well control event. BP failed to seal
01:37 the well when it was activated, although it was activated
01:37 untimely. Transocean routed hydrocarbons to ignition sources
01:37 such as the engine room and other places where hydrocarbons
01:37 could be ignited on the rig rather than overboard, as they
01:37 should have been.
01:37 BP's and Transocean's actions were superseding
01:37 causes of the blowout. You've heard Mr. Underhill say that had
01:37 the negative pressure test been correctly interpreted, the
01:37 blowout would not have occurred, we would not be here today.
01:38 You heard Mr. Brad Brian for Transocean say basically the same
01:38 thing.
01:38 Your Honor, as the evidence will show, BP's
01:38 drilling expert, Dr. J.J. Azar, and a vice president of the
01:38 company, Mr. Pat O'Bryan, had testified in their depositions
01:38 that the -- had the negative tests been correctly interpreted,

there would have been no blowout. The loss of lives and millions of barrels of oil would not have been released into the Gulf and we would not be here today.

BP's and the PSC's cement arguments are simply wrong, Your Honor, and we will show you that in the coming weeks and months in the testimony. The cement slurry design by Jesse Gagliano was a good design. Let me say that again, Your Honor: The cement slurry design was a good design.

As experts representing other parties in this litigation have testified in their depositions, the additives that Mr. Gagliano, Jesse, included in the design were appropriate and acceptable practice by experts in the oil and gas industry. The red herring that BP is attempting to use to criticize the cement design is the inclusion of D-Air 3000 in the slurry mix.

As the evidence will show, Your Honor, experts for other parties, in addition to Halliburton's experts, have said that the inclusion was entirely acceptable as long as the appropriate amount of surfactant -- or what is otherwise known as a foamer -- was included. That was done here.

Lastly, Your Honor, Halliburton's mud log and services were performed correctly by Mr. Joe Keith. BP is attempting to pass the blame off and say that Joe Keith missed evidence of a kick. That simply did not occur, Your Honor. You will hear Mr. Keith come to the stand and testify what he

saw that evening and what he did not see. And it was corrected in terms of the length of the time that Mr. Keith was on a break. It started out as 30 minutes; it was a misstatement. Then it was 10. It was actually between eight and 10 minutes, is what Mr. Keith said, that he did notify the drilling floor that he was going to go to the bathroom, take a smoke break, and he'd be back. And he was back within eight to 10 minutes. You will hear that explained on the stand.

Your Honor, BP failed to confirm zonal isolation by performing what is known as a cement bond log. As you know, Your Honor, a cement bond log evaluates bonding, presence of channeling, and the top of cement. It can also help to confirm whether a cement job is placed in the annulus, where it's intended to be.

BP's own best practice requires that a proven cement evaluation technique where top of cement is designed to be less than 1,000 feet above the highest hydrocarbon zone. Rather than incur the time, which was estimated to 12 to 16 hours, and the expense, which is estimated to be $128,000, to run a CBL, BP decided not to run it and dismissed Schlumberger's crew that was there on the rig for that very purpose. They had been sent out there. They were there. Money had been paid to have them there. And rather than spend the time on a well that BP was already 30 days overdue on -- 30 days overdue and about $50 million over budget -- they sent

01:41 the Schlumberger crew home without running the cement bond log.
01:41 Judge, a cement bond log could have determined
01:41 the top of cement. And if an issue was discovered, the cement
01:41 could have been remediated in what is known as a "squeeze job"
01:41 after the negative pressure test.
01:41 Judge, squeeze jobs are done at other intervals
01:41 and other locations within this very well. Squeeze jobs are
01:41 done regularly in the industry where there is the determination
01:41 made that there is something wrong with a cement job. There
01:41 was no showing there was anything wrong, but if there had been,
01:41 it could have been done, it could have been fixed, and it could
01:41 have been done quickly. But BP was saving time and money, time
01:41 and money by not doing it. And it proved to be a mistake that
01:42 we are all having to live with as we are here today.
01:42 Your Honor, BP misinterpreted the negative
01:42 pressure test. They have acknowledged it in Bly report. They
01:42 have acknowledged it in their guilty plea to the Department of
01:42 Justice.
01:42 The purpose of a negative test, Your Honor, is
01:42 to intentionally underbalance the hydrostatic pressure in order
01:42 to test the integrity of the barriers in the well to
01:42 hydrocarbon flow. One of those barriers is intended to be the
01:42 cement, but you can't rely upon it until you test it.
01:42 Judge, the negative pressure test is a
01:42 safety-critical test. Yet BP had no written procedure for it

to be performed on the Macondo well. There was no agreement -- if you can imagine it, there was no agreement, the evidence will show, between BP's drilling engineers -- Mr. Hafle, Mr. Cocales, and Mr. Morel -- and the two well-site leaders -- Bob Kaluza and Don Vidrine -- as to how the negative test would be performed.

As the evidence will show, Judge, they were making it up as they went, which set in motion a series of events that resulted in the blowout, the loss of lives, very, very sadly, countless injuries to others on the rig, and millions of barrels of oil into the Gulf, and the damages that bring us all here today.

Judge, BP performed at least two negative tests. There was talk about there might have been a third one, but we know of at least two, and they got it wrong both times. Not one time but both times. BP ultimately accepted a zero-psi reading on the kill line while ignoring a 1400-psi reading on the drill pipe. You have heard about that today. That's unacceptable. Accepted a "bladder effect," something never been heard of before by others at BP or with Transocean, in order to justify that the negative test was a good test. BP has admitted, in the Bly report and its guilty plea, that it misinterpreted this safety-critical negative test.

Judge, the bladder effect simply does not exist. There are a number of folks whose names I have listed there on

01:44 the screen. I have not pulled up here today. They were all
01:44 deposed in the series of over 300 depositions in this case.
01:44 Jonathan Sprague, BP drilling engineer, manager for
01:44 exploration, appraisal, development and production; Mr. Murray
01:44 Sepulvado, a BP well-site leader of many, many years; Ronnie
01:44 Sepulvado, a BP well-site leader.
01:44 Do we need a break, Your Honor?
01:44 **THE COURT:** Excuse me one second. Another technical
01:44 problem in one of our overflow rooms. I hope we are getting
01:44 those all out of the way today.
01:44 I'm sorry. I apologize. Go ahead.
01:44 **MR. GODWIN:** Another one who has said in his
01:44 deposition, Your Honor, that he never heard of this so-called
01:45 bladder effect, Mr. John Guide. He was the actual BP wells
01:45 team leader on this very Macondo well. He never heard of a
01:45 bladder effect.
01:45 Phillip Earl Lee; Dr. J.J. Azar, BP's drilling
01:45 expert; and others, Your Honor, all testified in their
01:45 depositions they never heard of this bladder effect that the
01:45 well-site leaders relied upon in determining that they had a
01:45 good negative test when they had differing readings on both the
01:45 kill line and the drill pipe.
01:45 Judge, the bladder effect doesn't exist.
01:45 Mr. Bob Kaluza, who has since taken the Fifth Amendment --
01:45 refuses to testify in the case -- he wrote on April 25, five

01:45 days after the blowout, trying to explain what happened -- he was one of the two well-site leaders. He said: "Please consider this" -- and he has copied Don Vidrine.

"Please consider this suggestion in the analysis about how this happened. I believe there's a bladder effect on the mud below the annular preventer, as we discussed."

We deposed Mr. Pat O'Bryan, Your Honor, who was the vice president of the entire Gulf of Mexico drilling and completions part of BP. And with regard to the questions about the bladder effect, he wrote an e-mail, and 560 times he logged in the question mark. He was asked: "Why did you do that? Why did you do it that many times?"

He said: "I was expressing my frustration with anybody having relied upon something as silly as a bladder effect to justify that the negative test was good when it was not."

Judge, from the rig floor to the CEO's office in London, BP knew or has since acknowledged the negative test was misinterpreted. Tony Hayward testified to it in London. Judge Shushan was there. Mark Bly, who was appointed to do the Bly investigation, he has acknowledged it in his Bly report. Mr. Kent Corser, one of the lead investigators, determined it as well. A drilling manager and engineering authority there with BP, Mr. Pat O'Bryan, you see his name, Your Honor. And, of course, Don Vidrine, well-site leader, Bob Kaluza, both have

taken the Fifth. We are not able to find out what they know about the subject, other than what Mr. Kaluza wrote in an e-mail. And Mr. Mark Hafle, one of the three engineers working with Jesse Gagliano in the cement slurry design, he has taken the Fifth, as has Mr. Brian Morel, the one that Jesse worked with most often -- Jesse Gagliano worked with him most often. We have not been able to ask Mr. Morel what he knew about the misinterpretation of the negative pressure test.

Judge, BP has admitted 11 felony counts. BP admits that its supervision and interpretation of the negative test were negligent and a proximate cause of the blowout and loss of lives. Quoting in part from that guilty plea, Your Honor, said: "On or about April 20, 2010, between approximately 5:00 and 8:00 p.m. Central daylight time, the negative pressure test performed on the Macondo well provided multiple indications that the wellbore was not secure. BP's well-site leaders negligently supervised the negative pressure test during this time, failed to alert engineers on the shore of these indications, and along with others, ultimately deemed the negative pressure test a success. All in violation of applicable duty of care. The negligent conduct of BP's well-site leaders is attributable to BP."

Your Honor, the proper interpretation of the negative pressure test was asked of one of BP's experts, Dr. J.J. Azar, who testified here to some questions asked about

that subject.

"**QUESTION:** The negative test had been correctly interpreted by BP and Transocean, and a determination was made that the cement job was not a good job. Remediation work could have been done that would have resulted in this blowout not occurring. Would you agree with that?

"**ANSWER:** I agree with that, sir.

"**QUESTION:** And if, in fact, that remediation work was done and the blowout didn't occur, we wouldn't be sitting here today and 11 men would not have lost their lives. Would you also -- would you also agree with that?

"**ANSWER:** I agree with that."

Your Honor, in addition to Dr. Azar, Mr. Pat O'Bryan -- as I said, BP's vice president of drilling and completions in the Gulf of Mexico -- was also asked a series of questions about this same subject.

"**QUESTION:** Had the negative test been correctly interpreted, there would not have been a blowout, would there?

"**ANSWER:** That is correct. Well integrity would have been established."

Well integrity would have been established.

Your Honor, the displacement of the riser resulted in hydrocarbon flow through a breach in the casing. Your Honor, the casing was set in compression, inducing

buckling and an eventual breach below the flow collar. As you have heard testimony -- not testimony, but you have heard statements and seen writings before, this occurred after nine attempts to convert the flow collar.

Judge, the cement job was pumped through a breach casing, resulting in lack of zonal isolation. It was BP's obligation to ensure that the cement was placed so that you had zonal isolation. They did not do that, Your Honor. Relying on BP's misinterpretation of the negative test, BP and Transocean displaced the heavier weight mud, Your Honor, out of the riser with lighter seawater, allowing hydrocarbons to escape through the breach and up through the rig floor, through a BOP that was not timely and correctly activated.

Judge, we have given you here a still shot, a screenshot, if you will, of casing and compression inducing buckling. You can see it here and what it would look like. Obviously, this is not to scale. Later in the trial, depending upon the ruling from Your Honor about the admissibility of the entire animation, we will attempt to show it to you at that time, but this shows you here what the casing would look like that is in compression and induced buckling.

Your Honor, the next slide shows the casing breach for hydrocarbon flow. You will see at the bottom down here where the casing has been put in compression, has buckled. There's a breach in it, and you see hydrocarbon flow coming in

01:51 through hydrocarbon zones that were not isolated.
01:51 Judge, Transocean, we believe the evidence will
01:51 show, failed to timely and appropriately respond to the well
01:51 control event; failed to properly utilize the blowout
01:51 preventer; Transocean did not timely shut in the variable bore
01:51 rams; failed to manually activate the casing shear rams or the
01:51 blind shear rams. Transocean, we believe the evidence will
01:51 show, Your Honor, failed to route hydrocarbons overboard;
01:51 instead, allowing them to be routed near ignition sources,
01:52 which is absolutely prohibited in deepwater drilling.
01:52 Transocean failed, we believe, Your Honor, to
01:52 timely activate the emergency disconnect sequence and likewise
01:52 failed to maintain the AMF/deadman system, preventing
01:52 activation of blind shear rams.
01:52 Judge, Transocean has a number of manuals that
01:52 deal with what are you supposed to do, what are the drilling
01:52 folks supposed to do there on the rig when they see something
01:52 unusual going on downhole, when there's evidence of something
01:52 that they might think of as a kick. The American Petroleum
01:52 Institute also has manuals and guidelines on this very subject.
01:52 I'm not going to go into all of them. You can see four up here
01:52 on the screen, Judge, but I would like to go into a couple of
01:52 them very briefly.
01:52 The *Transocean Well Control Handbook*,
01:52 Your Honor, at the chapter dealing with actions taken upon

taking a kick, containment as early as possible, says: "When a well kicks, it should be shut in within the shortest possible time. By taking action quickly, the amount of formation fluid that enters the wellbore and the amount of drilling fluid expelled from the annulus is minimized.

"It is the driller's or the person performing the driller's function responsibility to shut in the well as quickly as possible if a kick is detected."

Next, Your Honor, the American Petroleum Institute, API, has a recommended practice for well control operations. Under the paragraph dealing with well close-in proceedings, it says, in part: "When a kick is detected, the well should be closed in as quickly as possible to minimize influx volume."

You heard Mr. Brian say earlier, if BP had shut down the well -- shut in the well -- if BP had shut down the job, shut in the well, we would not be here today. We say that applies to Transocean as well. The API and Transocean's manuals both say it: If you detect a kick, you must shut in first and then investigate, not the other way around.

Judge, there are some examples that I have here on the screen of a number of gentlemen who gave depositions in this litigation that talked about this very subject of the requirement to shut in when a determination is made that something is awry downhole and then investigate. Let's see

what Mr. Micah Burgess, a TO driller, said about this subject.

"QUESTION: If you did suspect a kick, as the driller, you would shut in the well as quickly as possible?

"ANSWER: Me myself, I would -- if I suspected a kick, I would shut the well in. That's what I would --"

"I would shut the well in."

They saw parts earlier of Mr. Randy Ezell's deposition testimony. Let's see what he said about this subject of the requirement to shut in the well and then investigate.

"QUESTION: Prior to 2010, was there ever a time on the *Deepwater Horizon* that it was required by the operations to close the BOP and shut the well in? Did that ever occur? I'm just very generically saying shut the well in.

"ANSWER: Any time we have an indication that something is not right, that's our first course of action.

"QUESTION: Right. And that could be sensing of gas, acknowledgment of pressures. It could be many things, correct?

"ANSWER: It could just be the driller's opinion that something is wrong.

"QUESTION: Yeah. Many times, a perceived pending kick or pending blowout or pending loss of control of the

well, you would shut the well in instinctively, correct? As a general proposition.

"ANSWER: The best way for me to put it is: A driller is trained to shut the well in if he has any indication that something is wrong."

"A driller is trained to shut the well in if he has any indication something is wrong."

Let's see what Mr. Christopher Pleasant, TO's subsea supervisor, said about the same subject, Judge.

"QUESTION: In the event that a well control event is detected, is there a protocol for informing you of that so that you can go to station to assist with shutting in the well?

"ANSWER: Shutting in the well, secure the well, call me.

"QUESTION: Okay.

"ANSWER: Don't wait on me.

"QUESTION: Call you but don't wait on you?

"ANSWER: No. Shut the well in.

"QUESTION: Shut the well and then call you?

"ANSWER: Then call me."

And last, Your Honor, along that same subject, let's see what one of the BP folk said about it, Dr. Azar, the drilling expert.

"QUESTION: Let's go back some steps. Our

hypothetical driller has not yet shut in the well, but he has detected an anomaly that could indicate a kick. I'd like to ask your opinion and whether you believe his first step should be to try to discover what the anomaly is and then shut in the well, if it turns out it's a potential kick; or is it your opinion that he should shut in the well and then try to study and determine what the anomaly is.

"ANSWER: Shut in -- shut in first and then investigate. You don't try to investigate before you shut in.

"QUESTION: Is that a basic well control principle?

"ANSWER: Absolutely. It is taught in every school that I'm familiar with.

"QUESTION: Is it -- I'm asking this a different way. Is it a fundamental principle that every driller should understand? That is, if you have an anomaly, shut in the well, then determine what the anomaly is, as opposed to doing your study of the anomaly and then shutting in the well?

"ANSWER: Once you detect an anomaly, you shut in the well and then investigate. And it's not the other way around."

Now let's, Your Honor, take a look at a time line on April 20, 2010, where it shows that Transocean failed

01:58 to timely shut in the well but instead investigated first
01:58 before doing so. At 2126 to 2127, there was a pressure
01:59 increase on the kill line to 833 psi.
01:59 2129 to 2130, Transocean drill crew turned the
01:59 pumps off to investigate -- not shut in but turn them off to
01:59 investigate.
01:59 2130 to 2136, Transocean drill crew discussed a,
01:59 quote, pressure differential there in the kill line and the
01:59 drill pipe.
01:59 2138, Your Honor, jumping ahead a little bit due
01:59 to time, hydrocarbons entered the riser according to BP.
01:59 2143, hydrocarbons reached the rig floor
01:59 according to Transocean.
01:59 2143, Transocean's drill crew shut upper annular
01:59 preventer element.
01:59 They waited 13 minutes, Your Honor -- very, very
01:59 critical minutes -- from when they -- at 2126 to 2127, when
01:59 they realized they had their pressure increase.
01:59 2129 to 2130 is when they turned the pumps off
01:59 to investigate.
01:59 From 2130, Your Honor, to 2143, 13 minutes, they
02:00 were investigating. They did not shut in as they should have
02:00 done or -- according to their own manuals and the testimony of
02:00 their own folks.
02:00 Your Honor, 2147, Transocean drill crew closed

the variable bore rams. They had already done it backwards to the way they should have done it, Your Honor. They investigated, see what was wrong, and then decided to shut in. It should have been the other way around.

Judge, here is another still slide showing the BOP sequence as it should have occurred. You will see on the left the still slide and then the right showing the hydrocarbons escaping. It's showing -- this is the way it should have been done, had it been done correctly, but it was not, as the evidence will show as we go through this trial.

Coming up very, very, very important there, Your Honor, with that drill string being pulled, that was very important. And this is the way it should have been done, but the way it was not done, as the evidence will show.

Judge, moving ahead, there were also complaints in the depositions that we believe the evidence will show that Transocean failed to maintain adequately and properly their equipment there on the rig; that it was not in a state of repair, as it should have been, so that when they attempted to activate the BOP, it would not activate it as it should have.

Here's Mr. Doug Brown, Transocean's second engineer, a rig mechanic, when he was asked about the subject of BP maintaining its equipment.

"QUESTION: Do you know what conditions-based maintenance is?

"**ANSWER:** I'm not really sure.

"**QUESTION:** I think that means, when it breaks, you fix it. Have you ever heard that language in the Transocean culture?

"**ANSWER:** Yes.

"**QUESTION:** What does it mean in the Transocean culture?

"**ANSWER:** In the Transocean culture, it was run it until it breaks."

I can't imagine running it until it breaks. On something as dangerous as deepwater drilling, you have a culture that one of their own rig mechanics testifies their culture is, we run it until we break it.

Your Honor, turning now to the subject of the cement arguments that BP and the PSC have advanced, we suggest and believe the evidence will show that those arguments are simply wrong.

Judge, blowouts are caused by loss of well control, not by cement failure. That's axiomatic in the oil and gas industry. Cement is not a barrier until it is successfully tested by the operator, either with a CBL and/or a negative pressure test. You are going to hear that Transocean CEO say that later, and that is it would be unwise to rely upon cement as a barrier until you have tested it.

Halliburton, Your Honor, was hired to design,

02:03 test, and pump cement. It was the operator, BP's, responsibility to confirm the cement was placed in the proper location and effectively isolated hydrocarbon zones. BP failed to do that. That was not Halliburton's responsibility to place the cement in the proper location. That was up to BP and its plan. Halliburton designed the cement slurry and then they pumped it. You are going to hear BP's people say, eventually, Halliburton did a great job in the execution of that cement job.

Your Honor, there is actually no credible evidence that nitrogen broke out of the foam slurry. The evidence will show later what this nitrogen was, what it was made up of, and in the foam slurry, how it came about.

Absolutely no credible evidence the cement slurry did not set up. Speculation, conjecture, but there's no evidence of it, Your Honor, not from the experts.

Your Honor, BP acknowledged that the job execution was to plan. Let's look at the two e-mails -- couple of e-mails of Brian Morel, who has since taken the Fifth. Let's see what he said about Halliburton at the time and the job that my client did.

Here's an e-mail, Your Honor, he wrote on April 20, 2:52 a.m., after the cement job had just finished running. He wrote it to John Guide, the head of the crew of the cementing -- excuse me, the engineering group, Mark Hafle,

Brett Cocales, and Greg Walz, the senior engineer with BP. He said: "Just wanted to let everyone know the cement job went well."

Mr. Hafle wrote back later in the day on the 20th of April, saying: "Great job."

Next you have Mr. Morel writing on April 20, later in that day. He is writing it, again, only to engineers within BP, Your Honor. He didn't copy Jesse Gagliano. He said: "Just wanted to let you know that the Halliburton cement team they sent out did a great job."

Judge, that was then. This is now. Now is when they want to pass the buck and blame my client for their misdeeds, those of BP, and for their wrongdoing. They want to go back and reinvent and rewrite what happened.

The engineers working there with BP said my client did a fine job. They complimented them on what they did. Complimented them on what they did, and experts from a number of the other parties in this case have said that the cement slurry design that was done by Jesse Gagliano -- although it did include that additive D-Air 3000 -- was a good and an acceptable design because of the addition of what is known as Surfactant 2000, a foamer that offset any negative effects you might have from the D-Air 3000. We have experts that are going to say that. They were employed by other parties in this very litigation.

02:06 Judge, as I said, lack of zonal isolation does not equal blowout. You will see here many folks that were deposed in this litigation. I'm not going to show any slides today. Either their depositions will be read as we go through the trial, or they will come into the courtroom. But all of these folks here say -- from Richard Lynch, BP's vice president of Global Wells Organization; Kevin Lacey, formerly with BP, who was former vice president of drilling and completions in the Gulf of Mexico; and Kent Corser -- a host of others, Greg Walz, several experts here, Your Honor, all saying that lack of zonal isolation, in and of itself, does not equal blowout.

Your Honor, the cement should not have been relied upon until it was confirmed to be a barrier. Until it is confirmed to be a barrier.

Let's see what Dr. J.J. Azar, BP's expert, said about that subject.

> **"QUESTION:** Was the purpose -- or at least one of the purposes of the negative pressure test on April 20th to test whether the cement had -- it was adequately acting as a barrier to the influx of hydrocarbons into the casing?
>
> **"ANSWER:** Supposed to, yes."

And, Your Honor, let's see what -- we now have got BP's drilling expert. Let's see what BP's cement expert, Ronald Crook, said about this same subject.

> **"QUESTION:** How would you determine whether the

cement you've placed in the well is actually a barrier?

"ANSWER: By forming -- performing testing.

"QUESTION: What kind of testing?

"ANSWER: Like an FIT test, a negative test."

You have to perform a negative test if you want to confirm that cement is in fact a barrier. As Mr. Roy said, it should have been a barrier to flow, but you can't have it until you have determined that it, in fact, is a barrier.

Let's see what Mr. Steve Newman said, the CEO of Transocean, about that same subject.

"QUESTION: Would you consider cement to be a barrier before it's been tested?

"ANSWER: Before it's been tested?

"QUESTION: Yeah.

"ANSWER: I think that -- I think it would be right to suspect its capability to fulfill that function.

"QUESTION: But before it's --

"ANSWER: I think it would be unwise to rely on it as a barrier until it's tested."

The CEO of Transocean says: "I think it would be unwise to rely on it -- that is, cement -- as a barrier until it's tested."

That was BP's responsibility, Judge, and it wasn't done. They attempted to test it, but they have now admitted that they tested it incorrectly and the test came back

as a failed test.

Judge, the cement design that you have heard us talk about today so far was a joint effort between BP and Halliburton. You are going to hear BP talk about it was Halliburton's cement design. Well, BP had a lot of input in that design. They provided the parameters, the inputs. Much of the information that Jesse Gagliano for Halliburton relied upon were provided by BP.

You're also going to see that BP left out one of the very important hydrocarbon zones there in the well, did not disclose that to Jesse Gagliano prior to the time the cement slurry design was completed, prior to the time that the job was run and, in fact, Judge, did not disclose that hydrocarbon live zone until after this lawsuit was started and the depositions were under way.

The cement design and modeling was a back-and-forth process between BP and Halliburton involving BP engineers and one of BP's leading cement experts from around the world. Jesse Gagliano generated multiple versions of the cement program in what we know as OptiCem and forwarded them to BP for review, changes, and approval.

Judge, this exchange of information went on for months with these various engineers. And also, the gentleman with BP that I mentioned was a cement expert was a gentlemen by the name of Erick Cunningham, a very, very knowledgeable cement

expert within BP's organization, who was involved in this process of the cement design and working with the engineers at BP as well as Jesse Gagliano.

BP approved the use of foam cement, Your Honor, which had been recommended by Jesse. He thought it was the right type of mix, the right cement that ought to go down there. BP agreed with that. Erick Cunningham agreed with it. And also, BP approved and required the use of base oil, the top of cement volumes, how much was going to be needed and the retarder concentration in the slurry.

What I mean by that, Judge, was that Jesse Gagliano, as you will see in an e-mail in a moment, he recommended the use of 8 gallons of retarder in the slurry. BP said, "No, we are going to go with 9 gallons." It made a difference, Judge.

BP was dictating some of the parameters of what was going to go into that slurry. BP failed to disclose that M57B gas zone, the disclosure of which, Your Honor, would have flagged the job as having critical gas flow potential, likely requiring a redesign of the cement job and/or casing from a long string to a liner tieback.

That's the zone that I was talking about, Your Honor -- you will hear a lot about it in this trial, that BP did not inform Jesse of this live zone, the M57B zone, did not tell my client about that so that Jesse couldn't plan

around it in determining how much cement volume was going to be needed to also cover that zone.

Jesse Gagliano generated, Your Honor, these programs and forwarded them to BP for approval. Here's the e-mail, Judge, dated April 17. Three days before the well blew out, he is sending it to Brian Morel and other gentlemen there, engineers with BP. This is the one dealing with the retarder concentration: "Attached are the lab tests, one with 8 gallons of retarder and one with 9 gallons. Below are the pump times."

He goes on to say, "I would be comfortable going with the 5 1/2 hours time," meaning he wanted to go with 8 gallons. He wanted to go with 8.

You see, Jesse then writes the next day, Your Honor, on April 18, and he says: "Has it had to ask BP? Has a decision been made yet if you are going to go with the 8 gallons or 9 gallons of retarder?"

That wasn't Halliburton dictating what was going to be in it. He is asking, have you made the decision what you are going to go with?

Brian Morel writes him back two days before the blowout and says 9 gallons. Offered no explanation, no caveat, what do you think, Jesse? Are you okay with that? Just says, we're going to go with 9 gallons.

Judge, not only do we have BP rejecting and not following the advice of Halliburton regarding retarder

02:13 concentration; we also have them disregarding Halliburton's
02:13 recommendation regarding centralizers. Jesse had recommended
02:13 21 centralizers, which showed a minor gas flow potential with
02:13 the OptiCem model. Without informing Jesse, BP decided to go
02:13 with six.
02:13 They had brought out Weatherford centralizers,
02:13 the other 15 they needed. They had 21 there on the rig. But
02:13 instead of shut down and take the time necessary, spend the
02:13 money to put the other 15 on, they went only with six
02:13 centralizers, trying to save time and money, refused to put the
02:14 other 15 on even though they were there.
02:14 After learning from a Halliburton cement person,
02:14 Your Honor, on the rig of BP's decision regarding the six
02:14 centralizers, Jesse prepared the final OptiCem report. This
02:14 OptiCem showed a severe gas flow potential.
02:14 Let's see Jesse's e-mail on that subject.
02:14 Here's where he writes: "Attached is a revised proposal with
02:14 the changes, I believe, captured all the changes. Can you also
02:14 confirm if we are running the additional centralizers or not?
02:14 I have heard from the rig we are not going to run them. If
02:14 this is the casing" -- he meant "case" -- "I will update the
02:14 OptiCem to reflect."
02:14 This is a day before they start running it, and
02:14 BP still has not told him how many centralizers they're going
02:14 to run so that he could run his models and make sure that BP

understood what the degree of seriousness of the gas flow potential might or might not be.

Judge, we have seen this e-mail here where talked about six instead of 21. Our position is the evidence will show that BP could care less, end of story, when Mr. Cocales wrote on April 16, "Even if the hole is perfectly straight, a straight piece of pipe, even in tension, will not seek the perfect center of the hole unless it has something to centralize it."

Jesse was recommending 21. BP went with six knowing that it was -- as Mr. Walz had said earlier, they were going to assume the risk. "But who cares? It's done. End of story. We'll probably be fine, and we'll get a good cement job. I would rather have to squeeze than get stuck above the wellhead. So Guide is right."

Squeeze is what I was talking about earlier, Your Honor. When you determine, either from a CBL or through a negative pressure test, that you've got an issue with your cement job, then you can go back in to remediate; and the way to do that is with a squeeze job.

But when he says, "Who cares, end of story," yes, Your Honor, it was the end of the story that evening for 11 families when their loved ones were gone. And to have this e-mail written here some four days before the blowout where this gentleman is talking about, "Who cares, end of story."

My client was doing all it could, Judge, recommending go with 21. Let's try to straighten that pipe up. As he says here, "Even if a hole is perfectly straight, a straight piece of pipe, even in tension, will not seek the perfect center."

Jesse knew it needed to be centralized. They went with six rather than the 21, continually rejecting, failing to acknowledge and failing to follow Halliburton's recommendations about what they were going to do as far as centralization, retarder and other things.

Judge, Mr. Greg Walz was asked about this subject, and that is about running the six and the risk that was going to have to be assumed. Let's see what he said in his deposition.

"QUESTION: What I hear you saying, you and John Guide talked about those concerns of Jesse that you say you shared with Jesse, the two of you talked about it. And the two of you together assumed those risks on behalf of BP, did you not?

"ANSWER: We -- we decided to -- in our judgment to stay with the -- repositioning the six centralizers.

"QUESTION: And you knew that was a risk?

"ANSWER: Yes.

"QUESTION: But you and John decided that even though that was a risk of using only six centralizers, as you say

using your words, it was a risk, you on behalf of BP, you and John Guide assumed for BP that risk, did you not, by going with six centralizers?

"**ANSWER:** Yes, sir."

Judge, BP again ignored another Halliburton recommendation in a series of failure to follow Halliburton's advice with regard to bottoms-up circulation. It is common cementing practice or best practice to circulate the hole a minimum volume of one bottoms up once casing is on bottom. BP's own best practices, Judge, are to circulate a minimum of two volumes up. Two volumes up.

On April 19, Jesse discussed with Greg Walz a need for a full bottoms up before the cement job was pumped. He recommended the full bottoms up. Contrary to Halliburton's recommendation, Your Honor, BP had less than a full bottoms up circulated before the cement job was pumped. In fact, BP's own company man, Bob Kaluza, at a cementing meeting on April 17, said that we are going to run it with less than one bottoms up. Even though BP's own best practices are to run two, Halliburton's recommending run at least one, Bob Kaluza says we are going to do it with less than one.

Judge, let's change now to the cement design again and talk a little bit about this D-AIR 3000 and the slurry design. It was in fact reasonable and appropriate to include it. Jesse was attempting to meet BP's expectations of

transferring leftover blend to a new well to reduce cost. Judge, this was something that was a practice that BP and Jesse have done and used on other wells, as cost was always a factor with BP. They had always tried to use the blends when they could from other wells. Here it was taken off the Kodiak well and used on the Macondo.

The foaming effects of D-AIR can be overcome, Your Honor, with sufficient amounts of foaming agent or surfactant, as I mentioned earlier, a product known as ZoneSealant 2000. The experts in this case agree that the presence of D-AIR is an appropriate additive in a foam cement slurry. Contrary to what you are going to hear, Judge, from BP, oh, they shouldn't have used it, several of the experts said it was absolutely acceptable.

BP approved of the slurry containing the additive D-AIR 3000. They received from Jesse Gagliano report after report after report showing all of the various additives that were in the slurry, what it was going to do, and all the other parameters as they went through the various stages of the modeling.

Judge, a stable slurry can include a defoamer. Let's look at what just a couple of the experts have said here regarding using D-AIR 3000 in a foam slurry.

Let's pull up Mr. Ron Crook, BP's cement expert.

"QUESTION: Okay, sir. And so my question of you, as

you sit here today, do you believe -- do you believe that the presence of D-AIR 3000 in the -- in cement can be offset with the appropriate amounts of surfactant being included in the cement as an additive?

"ANSWER: It is possible.

"QUESTION: And you know that for a fact surfactant can offset D-AIR if appropriate amounts are used? You know that, don't you?

"ANSWER: It is possible, yes, sir."

Judge, let's see what Mr. Greg Garrison said about it, who performed cement testing post-incident for the JIT.

"QUESTION: You indicated that you noticed that there was D-AIR in the slurry --

"ANSWER: Yes.

"QUESTION: -- that Halliburton used to design the Macondo production casing job, right?

"ANSWER: Yes.

"QUESTION: Okay. As a cement tester, you would agree with me that there are additives that can counteract the presence of D-AIR, right?

"ANSWER: Yes.

"QUESTION: And, in fact, if you put enough foaming agent in a slurry, you can counteract the effects of D-AIR, can't you?

"**ANSWER:** Yes, you can.

"**QUESTION:** The mere presence of D-AIR in a slurry intended to be foam for a production casing job does not automatically say this is an inappropriate slurry for foaming, does it?

"**ANSWER:** No.

"**QUESTION:** Okay. And, in fact, what matters is the ability to test it to verify that you have enough surfactant or foaming agent in it to counteract the effects of D-AIR, correct?

"**ANSWER:** Correct."

Judge, let's jump over now, if we can, and talk about something that is known as the variability of cement. The PSC and BP's cement test post-incident do not show cement instability. Due to the principle of variability of cement, only foam, stability, and other tests conducted on actual rig cement have any relevance here. Recognize -- and this was recognized, Judge, in the BP/Halliburton contract where it said that only operational testing would be done with rig samples, not lab samples.

These other tests that were done post-incident where they try to say earlier -- show that the cement slurry was unstable, they were done with lab samples, not rig samples. Your Honor, it is recognized in the industry of hot-shotting samples to shore for operational testing and also acknowledged

by non-Halliburton witnesses and third-party labs that conducted post-incident testing.

Judge, let's see what a couple of folks said regarding the use of lab samples instead of rig samples and whether or not that is representative of rig cement testing. Let's see Mr. Greg Garrison.

"QUESTION: And so the industry -- the operators in the industry, for example, incur time and expense to either use a helicopter or a boat every 20 to 30 days to go get a refreshed sample from the rig for purposes of coming back and testing for an operational job; is that right?

"ANSWER: Yes.

"QUESTION: And would you agree with me that the reason they do that is out of concerns for representativeness of the testing?"

"ANSWER: Yes.

"QUESTION: Okay. And just not to put too fine a point on this, the concern is that if we were going to have a production casing job and we know that there is a blend out on the rig, we would not try to replicate that blend in the lab and test it in the lab and transpose those results to what we expect to happen with the rig blend, would we?

"ANSWER: No, we wouldn't.

02:23 "**QUESTION:** There could be differences, increases or decreases in humidity during the transport process, correct?

02:23 "**ANSWER:** Yes.

02:23 "**QUESTION:** And each of those things has the effect to alter the chemical characteristics of the actual blend itself, correct?

02:23 "**ANSWER:** Yes, it can.

02:23 "**QUESTION:** Okay. And to guard against that, the uncertainty of that, it's one of the reasons the industry actually goes out and refreshes sampling for operational testing from the rig, correct?

02:23 "**ANSWER:** Yes.

02:23 "**QUESTION:** Okay. And each of those things we've talked about introduces a potential or the possibility of variability in testing, doesn't it?

02:24 "**ANSWER:** Yes."

02:24 Judge, let's see what Mr. Daryl Kellingray said. He's another internal BP employee who's recognized around the world as one of the leading cement experts in the world on this subject -- said about variability of testing and using lab as opposed to rig samples.

02:24 "**QUESTION:** But you would not rely upon those tests to the extent that you would on tests conducted on rig samples, would you?

"**ANSWER:** As I said, we have a requirement in BP, you would always test anything that goes into the well using rig samples.

"**QUESTION:** And there will be differences -- if you're testing with rig samples, they would be different results from those using substitute samples, correct? Yes or no?

"**ANSWER:** It's quite common that we would see differences."

Quite common that we would see differences. Your Honor, pre-incident tests show the slurry was stable. Halliburton's final foam stability test performed pre-incident using actual rig cement showed the slurry was stable. You will see that test here in the courtroom as we go through the testimony over the next several weeks. There is absolutely no credible evidence that the nitrogen gas broke out of the foam slurry pumped into the well on April 19 and April 20.

Judge, dealing with the subject of mud logging, as I try to close it up here, Halliburton's mud logging services were performed correctly. Your Honor, the Halliburton mud logger is actually a second set of eyes on the rig. The first set is TO, Transocean. The second set was the mud logger. The mud logger has less information available to him than the Transocean drill crew.

You will see some frames here in a moment

showing where their locations -- where their work sites are. Transocean obviously had greater visibility with what was going on throughout the rig. Halliburton's folks did not. Rig activity on April 20 impeded Joe Keith's ability to monitor all sensor data for signs of a kick. And, Your Honor, Joe Keith did not miss any clear indicators the well was experiencing a kick.

Next is a still frame, Your Honor, showing the Transocean drilling control station. It shows here all the glass all the way around. They will be able to see the drill pipe. They can see the floor, see everything that was going on. They see the mud pits; contrasted by Halliburton's mud logging shack is inside the building, no external windows, not able to see out.

They've got some monitors there; but as a second set of eyes, they are limited in the equipment that the mud logger has available. Although it does have equipment, to monitor what's going on downhole, it cannot see all the other things that would be going be on in the well such as use of open pit system for displacement, repeated flushing of trip tanks during displacement, and in the numerous activities that were going on there on that evening just prior to the blowout.

The transferring of mud between many of the pits, offloading of mud to the *Damon Bankston* -- that was the vessel next to the Macondo -- and the lack of communication,

02:26 Judge, from rig crew about activities under way. Joe Keith was
02:27 having a problem that evening communicating with the Transocean
02:27 employees, as you will see in this next time line.
02:27 5:00 or 1700 hours, Joe Keith comes on board, on
02:27 duty. 2000 to 2010, he called the rig floor about increase in
02:27 flow-out. They advised him they were dumping the trip tank.
02:27 Later on he called them up about slow gain in the active pits,
02:27 were told they were moving mud out of the sand trap. This is
02:27 all on that evening, Judge.
02:27 You jump over here now to 2034 to 2100, Joe
02:27 called to drill floor to advise he was going to take a break
02:27 for eight to 10 minutes. He took his break, he came back, he
02:27 called them. He looked, he saw no anomalies, no missed kick
02:27 indicators when he got back.
02:27 You jump over now, Your Honor, to 2116, he
02:27 called drill floor about rig pumps coming online in an abnormal
02:27 matter. Judge, he was told by the assistant driller, "That's
02:27 how we're doing it," and the assistant driller with Transocean
02:28 hung up on him. That's the lack of communication that he
02:28 didn't need there that evening. And for somebody to be trying
02:28 to lay it off on Joe Keith when he was making these repeated
02:28 calls, he was pointing out the issues that he saw, the
02:28 differential in the pressures. He was pointing all that out.
02:28 2126 to 2129, TO drill crew shut down the pumps
02:28 to investigate the pressure differential. That's important,

Your Honor. They shut down 13 -- they shut down at 2129 to -- 2126 to 2129. And instead of shutting it in, they shut down the pumps, started investigating. They had not yet shut in the well, which they should have done.

Judge, going back here in the closing frame that I've got, this case is about a loss of well control and BP's misguided attempts to blame Halliburton and others for BP's misconduct. During the negative test, BP and Transocean removed the primary well control barrier, the heavier mud, inviting the well to flow, the displacement, and disregarded obvious signs that the well was flowing.

At 9:30, Transocean knew there was a problem but failed to timely shut in the well, waiting a critical 13 minutes.

Judge, BP has acknowledged they misinterpreted the negative pressure test. Witnesses have said -- lawyers have said here today that if the negative pressure tests were correctly interpreted, there would have been no blowout. A squeeze job should have been done. BP was saving time and money. Actions of BP resulted in casing buckling and casing breach, using inefficient -- insufficient number of centralizers. And as the leading PSC lawyer has recently said, BP is trying to hide behind Halliburton.

Last point, Judge, we go right back to where I started. BP's and Transocean's actions were superseding causes

of the blowout. Judge, I would say to you that I believe the evidence will show that my client performed all of its obligations and duties under its contract with BP. The cement slurry was designed in a good manner, as it should have been, has been determined by experts for many of the parties in this case to have been a good design. The cement job was executed, according to BP's own people, in an excellent manner.

My client's mud logging services were as expected. Joe Keith did a good job. He is being blamed unfairly for something he didn't do. We do not believe that the actions of Halliburton in any way whatsoever, Your Honor, contributed to the blowout and the very, very serious and horrific incident/accident that happened that evening that cost the lives of, no doubt, 11 wonderful men, 11 wonderful men. Caused the loss of millions of barrels of oil that went into the Gulf and have harmed so many people.

Judge, on behalf of Halliburton and myself and my team, I would like to thank you for your patience in allowing me to present Halliburton's opening statement here today. Thank you, sir.

THE COURT: Thank you. BP is up next.

MR. BROCK: Your Honor, my time is 90 minutes. Do you want to go ahead and do this now or take a short break?

THE COURT: Let's take about a 10-minute recess. We have 90 minutes of BP, and then we have another 20 minutes

between Cameron and M-I. So we have about two hours left. Let's take about a 10, 15-minute break.

(Recess.)

THE COURT: Please be seated.

All right. BP. Mr. Brock.

MR. BROCK: Good afternoon, Judge Barbier and counsel. There have been a good number of statements made today that BP has been pointing fingers at its contractors. I hope that Your Honor will see what we have to present today as pointing out facts that will be helpful to the Court and not pointing fingers. That's certainly our intention in terms of our presentation and in terms of what we intend to present at trial.

On April 9, 2010, the drilling of the Macondo well was complete. All of the drilling activity that was to occur had been completed. What needed to occur after that is that the well needed to be logged, the geologist needed to understand what the conditions were in the hole and what the possibilities were for coming back, and the well needed to be cemented and temporarily abandoned. Those were the things that were left to do after the drilling operations were complete on April 9.

Unfortunately, in that period of time between April 9 and the blowout that took place on the evening of the 20th, there were a number of mistakes and errors in judgment

that were made by BP, Transocean, and Halliburton. Those are the things that we will be discussing today and in our presentation during trial.

Every well that is drilled and completed has preventions to a blowout, barriers to a blowout that are in place to keep -- that are designed to keep from happening what occurred here. BP had in place industry-standard redundant systems, equipment, and people to prevent the very kind of accident that occurred at the Macondo well. This is what's in place in terms of industry standard.

You have heard a number of comments about these barriers today. Mr. Underhill showed you the barriers that were penetrated in the Swiss cheese model and advanced to the Court that that shows that BP was grossly negligent. We say that demonstrates precisely the opposite. Because BP had in place industry-standard barriers, it shows their due care.

So what are the events that had to take place in the presence of these industry-standard barriers for this accident to occur? First, there is cement that is pumped to the bottom of the hole to isolate the hydrocarbons at the bottom of the hole. The idea is to pump the right kind of cement, to get it in the right place so that the well will not flow.

In this case, Halliburton was expected to design a cement, test the cement, and pump the cement. Every

02:50 Halliburton witness that has testified in this case has said about its cement design, that it should not have used D-AIR 3000 in a cement that was designed to be a foam cement. Should not have done that because D-AIR is the opposite of what you are trying to achieve. It's a defoamer. That bad slurry that was pumped to the bottom of the hole is what caused this well initially to flow.

The second barrier that's in place -- industry-standard barrier that's in place is well integrity testing. It's not just the negative tests. There are also seal assembly tests and positive tests that are conducted in order to test the integrity of the well. The negative test is also included in that series of tests that can be conducted.

BP has acknowledged that it misinterpreted that negative test. That is not new news. When BP initiated its internal investigation two days after the accident, engaged more than 50 engineers to look into this incident, they thoroughly investigated it, and one of the outcomes of that investigation was that the test was misinterpreted. We have always acknowledged that, Your Honor, since that investigation was complete and published in a nonprivileged way. We will talk about that a little more in our presentation today.

Well control is also important. Well control is primarily the responsibility of Transocean during this period of time. They have a driller, an assistant driller who are

responsible continuously to monitor the well. It does not matter what the activity is; it doesn't matter if you are planning to temporarily abandon; continuously monitor the well.

Then, of course, there is the blowout preventer, which is the last line of defense to an event like this. And here what we see is a combination of problems that did not allow the blowout preventer to shut in the well.

First, as many of the lawyers have said, the blowout preventer was not activated in a timely fashion. It needed to be activated at a time point earlier than it was.

Second, the blowout preventer was not properly maintained. When communication was lost between the rig and the blowout preventer, there was a redundant system there that calls on the blowout prevent to shut in the well. If there's a problem at the rig, there's a system on the control pods on the BOP that activate the rams and shut in the well.

What we have learned about the BOP in this case is that in one of the pods there was a dead battery and in another of the pods there was a miswired solenoid. Those maintenance deficiencies are primarily the responsibility of Transocean.

Those are the multiple reasons and parties that are involved in this blowout and the occurrence that occurred here. That's just an overall summary of what we will present now, Your Honor.

So as we think about how to understand the industry and understand how deepwater drilling is managed, especially in the Gulf of Mexico, we believe looking at the case, using these three issues, is helpful; that is, the roles and responsibilities of the companies, how the risks of deepwater drilling are managed, and what caused the blowout. Those are the issues we will try to focus on today and through the trial.

Now, Your Honor, as we have learned about drilling in the deepwater environment over the past two-plus years in working in this case, one of the things that we have learned is that the men on the rig have very close relationships, and the drilling is termed what they call a *team sport*.

We looked for a good example of a statement relating to this, and we found this from Steve Newman, the CEO of Transocean: "The well construction process is a collaborative effort involving various entities and many personnel: the well operator, government officials, the drilling contractor, the mud contractor, the casing contractor, the cement contractor, and others.

Deepwater drilling is complex. The technology is complex. And the specialty contractors are what enable the industry to continue to drill in deep water. These contractors have specific responsibilities, specific duties to carry out in

02:55 the context of deepwater drilling.
02:55 BP also has an important role, and we don't step
02:55 away from that, not one bit. I want to focus here, Your Honor,
02:55 just on the last three bullet points here. In drilling
02:55 deepwater wells BP is responsible for designing and engineering
02:55 the well. We also obtain the lease, we file the drilling
02:56 permits and then develop a plan for drilling the well.
02:56 Our drilling engineers are considered the well
02:56 architects and the planning coordinators for drilling. And as
02:56 I have mentioned and as I think is well understood, operators
02:56 like BP use specialty contractors to drill the well, to monitor
02:56 the well, and cement the well.
02:56 This issue here has been referred to by the
02:56 Court already, but I would just like to show you the evidence
02:56 on this. BP did select Transocean as its drilling contractor
02:56 for this well. Transocean is one of the top drilling
02:56 contractors in the world, and BP stands by its selection of
02:56 Transocean to drill this well. We are going to talk about
02:56 mistakes and errors in judgment that were made, but Transocean
02:57 is one of the top drillers in the world, and it shows due care
02:57 by BP that it engages a company like Transocean.
02:57 Halliburton, the same situation. Here the
02:57 primary issue that's involved is foam cement, and Halliburton
02:57 holds itself out and is one of the top suppliers of foam cement
02:57 in the world.

02:57 So this is the team that's put together to do the work in terms of the drilling of the well.

There's also the important piece of equipment, the blowout preventer. This is just a pullout of the quote that you were shown earlier today, I think, by the PSC. I won't read that again. I will describe what we will talk about a little bit later in terms of failure modes of the BOP.

This is a Gulf of Mexico MMS lease map, Your Honor, and it just basically shows how active drilling is in the Gulf of Mexico, how important it is to this region. And it also demonstrates why the technology of deepwater drilling has advanced to the advanced place that it has, and that is that the resources in terms of oil is primarily in deep water. If you look at the production of the Gulf of Mexico, there are about 500 or so producing wells in deep water that's over 1100 feet, and they account, recent numbers I have looked at, for about 80 percent of the oil production out of the Gulf. So most of the production that we see now in the Gulf of Mexico of oil is in deep water, that is, over 1100 feet of water.

These red dots that are coming up here are places in the Gulf of Mexico, including Macondo, which came up as the blue pin, where BP and Transocean worked together to successfully drill wells. Halliburton was involved in most of these wells. So these people, the folks that work for these companies have been successfully doing this for a long time in

the Gulf of Mexico.

This is just another way of looking at the same issue, but significantly, if you look at the Tiber well, 35,050 feet, that's the deepest well in history drilled by BP and Transocean. And just before the Macondo well, you have heard about the Kodiak well. In 2009 and early 2010, BP and Transocean successfully drilled that well.

Now, Your Honor, you are going to hear in this case a lot about the term *process safety*. You have heard about it some today. You will learn that in process safety they have their own language, their own way of looking at things, their own way of approaching issues. You're going to see more initials and long words to describe some of the things they do. But it's an important issue. It's an important process. But the one thing that we have to really keep front of mind when we think about process safety is that the primary goal of process safety is to prevent the loss of containment of hydrocarbons. That's why process safety is in place.

You have heard about Dr. Bob Bea, who we will be seeing tomorrow. In his deposition we asked him about the development of the OMS system, the operating management system, by BP and asked him: "Was it a positive step?"

He said: "Outstanding step.

"And you testified that the OMS system, in your view, was an outstanding system?

"Yes."

Then I would like to ask you to focus, Your Honor, on the second question there. As you may recall, Mr. Roy shared with you that Dr. Bea met with BP in the early 2000s to advise them on safety issues. He didn't share with you that Dr. Bea has the view that BP expressed a major commitment to a far better safety process regime after 2005. We'll explore some of those steps with Dr. Bea when we have the opportunity to question him tomorrow and maybe the next day.

There was a reference to one of the board members, William Castell. An excerpt of his testimony was shown where he said: "Of course, if we knew the well was going to blow out, we wouldn't have drilled it." That's one of the things sort of like Monday morning quarterbacking. If you look back on something and you have a bad outcome, of course, you would do something different.

I just want the Court to be comfortable, though, that at all levels of BP in operations, we understood -- the company understood that the loss of well control was a significant risk, and it was treated as such.

In the Gulf of Mexico and throughout the world, when an operator is working with a contractor, the safety system that has the primary place on the rig is the contractor's safety system. Judge Barbier, this testimony here reflects the reason why. It's the preference of the drilling

contractor to use their system, their general practice to have their HSE policies govern. It's less confusing for our people, for our people to have to change management systems every time they change companies. So there was a robust safety system in place on the *Deepwater Horizon* when it was drilling the Macondo well.

This reflects that Transocean identifies loss of well control as a risk at the *Deepwater Horizon* in their major accident risk assessment. If you look, Your Honor, at the third column -- "Preventions": well control, maintenance and testing of the BOP, instrumentation, hydrocarbon/combustible gas systems, redundant BOP controls -- those are the issues that we will be talking about in this case. These are the risk mitigation processes that are in place to prevent a loss of well control.

One of the things an operator wants to do if it has a good safety system is to make sure that the people that are working on the rigs that it contracts are in tune to the safety standards that it desires to see met.

This is a 2008 Gulf of Mexico safety pulse check of the *Deepwater Horizon* crew. You can see here the emphasis that the crew of that vessel placed on safety.

"Do you feel you were given enough time to properly plan the job?" 100 percent: Yes.

"Do you feel you could raise a safety concern

without repercussion?" 100 percent: Yes.

"Does senior facility leadership always send the right message on safety?" 96 percent: Yes.

"Do you feel you are in control of your own safety?" 100 percent: Yes.

People that work in safety will tell you that these are very, very positive numbers and reflect that an appropriate safety culture is in place on the rig.

This is a summary of the same survey from some of the interview sheets that came back. "Strong performance and safety culture is embedded." This is the *Deepwater Horizon*. "Excellent team work between Transocean, third party, and BP personnel."

I want to pause just for a second on something that's been said by counsel for Transocean today, that there were issues with communication, that we weren't telling them about risks. That is just not true. This team, the *Deepwater Horizon* vessel and crew working with BP, had an excellent record, and they had an excellent record for communication. We will talk in this case about the way they did that by sharing the drilling program. Pre-spud meetings. The well adviser programs. Five-day planners. Daily planners. Daily meetings on rigs. Pre-job think drills. All of these processes that are in place enabled good communication to take place about the operation that's going on and the operation

that's coming up.

"All rig personnel are very proud of safety and performance history." And that is the *Deepwater Horizon* working with BP.

This has been mentioned today. I only want to spend just a second on it, but it's something that is vitally important to understand if we are going to have a good understanding of what happened on April 20. And that is kicks -- that is, the influx of hydrocarbons into the well -- are not uncommon in deepwater drilling; and they're especially not uncommon in the Gulf of Mexico, which is one of the most challenging environments in the world in which to drill. They are not uncommon. The entire industry is organized around detecting the kicks and techniques for shutting the well in quickly when they are detected.

So how did BP and Transocean do when looking at this important metric of kicks, that is, are they being diligent when working together to be on top of well control events? This shows you some of the data that was discussed earlier. 329 of the 556 well control events were kicks. This is 2005 to 2009, Your Honor. This is the data. A red zone kick, as you have heard, is a kick that is more than 20 barrels. When you have more than 20 barrels of influx into the well without catching the influx, that's considered a red zone kick. Reasonable care keeps it under 20.

In the period of time 2005 to 2009, BP and Transocean didn't have a single red zone kick. Not a single one. This is an important number, too, because Transocean also tracks the highest number of -- tracks the precautionary shut-ins. And you can see here in the right-hand column over there that BP had more precautionary shut-ins than any other company, more than Shell and more than Chevron, who will be described to you by Dr. Bea as gold standard companies.

What is a precautionary shut-in? That's when the well is circulated, shut-in with slightest doubt of increase in flow from well, or it could be that the well was shut in due to no flow. This indicates rig alertness to respond to a well control situation.

BP and Transocean had a terrific work record in terms of the metric that matters in this case, well control, until the unfortunate events of April 20.

So how does BP provide for a safe design and drilling plan? I just want to cover this very briefly because it will give you a time line. Your Honor, you will have this slide. Hopefully it will be somewhat helpful to you. But it shows the stage gates that BP goes through to design a well. And then we also give you here when the gate meetings took place on the Macondo well, and you can see that it's over five months in the planning.

Just one brief point I will make about this is

that at each of these gate meetings, a gatekeeper gets a full package of the material that has been assembled on things like no drilling surprises assessment, the risk register, the conceptual design, updating the risk register. All of those things are done on a very careful and diligent way, and the experts will tell you that BP's basis for design for this well met industry standard.

Now we come to the important issue of well integrity testing that we talked about in our first slide. I'm going to direct Your Honor's attention first to the cement job that started on April 19 around 8:00 and was completed at 12:35 on April 20. This cement job was pumped by Halliburton. And as you can see here, Nathaniel Chaisson is reporting to Jesse, "We have completed the job and it went well. Full returns were observed throughout. I estimated 100-psi of lift pressure before we bumped the plug."

Now, I'm going to be very honest with you. When I got into this case, I had never heard of bumping the plug, but let me just give you a bit of background because I think it might be helpful as we go through the case. The cementers understand the volume of the well. They understand pump rate. And that gives them a very good sense for when the plugs that go ahead of the cement when the job is being pumped should land at the bottom of the well on what's called a *float collar*. You have heard some discussion about that.

03:12 So what they are looking for is to see do those plugs bump. When they do, there's an increase in pressure. If they arrive about when they should, that tells you that there's not a big issue with mud being in the well that would be contaminating the cement. It also tells them that they can expect that the treatment will go down through the float collar, down through the shoe track, and make the turn up into the annulus; that is, it's going where it should be, it's arriving when it should.

Lift pressure is what occurs when the cement gets down through the shoe track, down to the bottom, goes out the shoe track; and when the cement starts coming up, because it's heavier, there will be lift pressure. So that's the other thing they look for: Is it happening about when we expect it to? And are we seeing that lift pressure? Because that tells us the cement is down and it's making the turn and it's coming back up.

Full returns, that is, they know how much cement they have pumped down. Are they getting a like amount back to the rig? Is the well behaving as it should?

Those were the preconditions for a successful cement job that were set for this well, and they were satisfied here and reported to us as such. This is the Halliburton cement job pumped as planned. BP believed at this time that the cement had been pumped and that it was down through the

shoe track, up into the annulus.

So the next thing that occurs, no rest on the rig. They finish up the cement job just after midnight. Then from 1:00 to 3:00 in the morning -- 1:00 to 3:00 in the morning, they conduct a seal assembly test. And that's simply a positive test where they check the integrity of the seal right at the wellhead. Then a positive pressure test is conducted, and you see that this comes up the next morning. And for both of these, the test passed. So the integrity of the well is intact on the positive test.

And then the next thing that occurs is the negative test. I hope this will be somewhat helpful, but this just shows, in a series of three slides, how the negative test is conducted. If you see in the first slide, the orange in the middle is coming down the drill pipe, which has been lowered to about 8300 feet from the surface. That spacer will come all the way down to the end of the drill pipe and then it will turn against the mud that's in the well and it will go back up, then followed by seawater.

Over on the very far right, you will see that the seawater has now displaced the spacer to above the BOP. So that's the sequence that you are looking at in terms of the setup of the negative test.

Why are they doing it that way? A negative test is a controlled test of the well in the condition that it will

be when temporary abandonment occurs. So right there, if you see the 6367 mark, that's where the cement plug would be set at temporary abandonment. It's not a good test unless you test it in the condition that it will be when you pull your BOP up and leave the well. So that's the reason that this test is set up in the way it is.

It's called *controlled*, Your Honor, because if you look at the figure on the far right, the spacer that's in the BOP -- above the BOP, if there were a well control event, that spacer and mud could be released back into the well. So it's a controlled test of what will occur.

These men, BP and Transocean, had conducted many negative tests before. This just happens to be the one that was conducted at Kodiak just before they came over to the Macondo well. This one was done in January, BP and Transocean conducting the test together. The men of Transocean knew how to conduct a negative test. This is Brandon Burgess, and I think you have seen some of his testimony. But Transocean's men knew how to conduct a negative test.

Now, this gives a little more detail of what happened on the day of the event. The first test is on the left. It's a test on the drill pipe. They tried to bleed the drill pipe down to zero. They did get down pretty close, but pressure kept coming back up on the drill pipe. The men of Transocean were aware of that. The men of BP were aware of

that. They worked on this issue for a long period of time.

One of the things that I think is important to keep in mind -- I hope that we can convey this in an adequate way during this trial, but the bottom line is when the men of Transocean and BP are interpreting a test like this, there are no dictators in the group. They are working collaboratively to get to a decision that everyone is in agreement with. If anyone disagrees, all they have to do is say, stop the job. Everyone on the rig is empowered to do that, and they will do so.

This is the test on the right -- I'm sorry. I skipped ahead -- that was misinterpreted. When they set it up to do it the second time, they found no flow on the kill line. That's where you've got the green line coming to the top. That's what they were looking for. They continued to have the 1400 psi on the drill pipe, and this is the test that the men discussed at length and misinterpreted.

As I said, it was a collective and collaborative decision. This is Randy Ezell's testimony about his interaction with Jason Anderson around 5:30. He says here -- he was there, and it's with Jason: "And actually, one of the last things I told him, I told Jason, there's so many people swapping up. It wasn't lined up correctly as per the APD anyway. I told him, stop the job -- as we would say at Transocean, stop the job. Gather everybody included in this

negative test, get it lined up like you need it, make sure the well-site leaders are on board, and go from there."

There were no dictators in this group. They reached this decision in a collaborative way.

One of the Transocean men advanced this idea of the bladder effect, and it was accepted by the BP well-site leaders and other representatives of Transocean. This is the testimony of Lee Lambert, who will actually appear here live during this trial to describe this. Jason Anderson was, we agreed, a very, very well-regarded member of the Transocean team. He had been with the rig since it was put in service. He has been described as one of the backbones of the Transocean rig. He had a great deal of credibility with all of the men there.

And this explanation that he gave that mud would be transmitting through the annular and causing a differential pressure in some way was accepted. It shouldn't have been, but it was. But it was not a situation where people were trying to rush. They were not in a hurry. They took several hours to talk this through. They were being careful. Their lives were at risk in terms of the interpretation of the test. They all knew that. They counted on each other.

This is not a situation, as has been described by Mr. Underhill and others, that reflects a want of care or an intentional act to hurt someone or the environment. It was a

mistake. It was a mistake made by several men with two different companies. They should not have accepted it. They did. But it was a mistake. And this did contribute to the accident. BP has agreed to that, as has Transocean, who says their participation in this negative test was a proximate cause of the outcome.

Everyone thought this test was a success. This is Randy Ezell, the senior toolpusher. He talked to Jason probably around 2108, 9:08, and Jason Anderson said, "Everything is going great." If Jason had been railroaded by BP into accepting a test he didn't like, we would see something different than this right here, which is his communication to Randy Ezell: "Everything is good. No, I got this. It's a good bit. It's going good." This is what Jason says. Collective, collaborative decision.

Now, there's been a lot of talk today, Your Honor, about the Vidrine/Hafle call that took place that evening. I would like to focus, Your Honor, just for a second on the box at the bottom. What we know about the conduct of the negative test from Vidrine and Hafle is what we learned in the interviews as part of the internal investigation that BP conducted. These notes were not intended to be verbatim. They were not intended to be transcripts. So we are picking and choosing lines and saying we know what they were thinking, we know what happened, and we are pulling those different

statements out of interview notes that are made by engineers conducting interviews.

But if we look at those notes and look for consistency, here's what we find: There was a call at 8:52. The call was to discuss the cement plug. Your Honor, that's the -- if you go down 8300 feet, that's what would have been set when they temporarily abandoned. Not the cement all the way down at the bottom of the well but the cement plug. Hafle asked how things were going, and Vidrine told Hafle he was satisfied or comfortable with the test. This is what can be gleaned in a consistent way from the interview notes.

Now, Your Honor was shown the top half of this e-mail by a couple of the parties in presentations today. I would like to focus on the second part. This is the Hafle interview notes. Don, that's Don Vidrine, told Mark he was fully satisfied that the rig crew had performed a successful negative test. Mark said he didn't have the full context for what had transpired during the tests and it wasn't clear to him whether Don was talking about the first or the second negative test. Don told him he watched the kill line for 30 minutes and didn't see a drip come out of it. And so Mark assumed that Don had concluded that it was not a problem.

That's the full context of those interview notes. This is what we have to work with in this case. We know from the testimony what happened on the rig. This is what

we know, this note and some others, about that telephone call, but this does not reflect gross negligence, want of care, intentional willful conduct. This is a conversation where someone says we had an issue with the negative test and the person who's receiving the information on shore is hearing that the man on the rig, who was experienced and qualified, believed that the crew had conducted a good test. That's the extent of the communication that we know about on the negative tests.

This is the United States' drilling expert. I will just focus the Court quickly on the second question -- or answer.

"QUESTION: Do you believe that any of the men involved in the negative pressure test had an incentive to get the test wrong?

"ANSWER: I don't think they had an incentive. I don't think it was done intentionally."

These people knew and respected each other. They were trying to get it right. They were trying to do the right thing. This is Mr. Heenan just confirming that the operator has the final say on the test and that if the contractor or any other party had a problem, they would voice it.

Finally, the OIM, which is the top person in the Transocean organization on the rig on the 21st, conveys that Randy Ezell -- that he had talked to Randy Ezell just

10 minutes before the incident, and Randy conveyed that a successful inflow pressure test had been conducted and that there was no flow. This is the top person on the rig, and testimony will place Jimmy Harrell in the drill shack when discussions about the negative test were taking place.

So this is a model of the Transocean rig. I just want to do a very quick, just tour down to an important place on the rig, because I'm going to come back to this in just a little bit. This comes right into where the drill floor is. Your Honor, you can see the rotary table there, the driller's cabin -- that's what Mr. Godwin was showing you just a little bit ago -- and the drill floor. This is the center of the universe as relates to this rig. The reason this rig is here is for this rotary table right here, which sends the drill pipe and other tools downhole to do the work of the rig. The entire rig is there for this area right here.

This is the control center of the rig. You go anywhere in the world, go to a rig, you will find a driller sitting right there in that left chair with all of the equipment and the resources of the rig right there available to him at his fingertip.

This point has been shared. I think it is understood. When we talk about roles and responsibilities on the rig, the person who is responsible for monitoring the well at all times is the driller. It's his responsibility to shut

in the well if a kick is indicated or suspected.

Detection of the kick is the responsibility of the driller. It's the driller and the assistant driller who work in that driller's cabin that we just looked at.

This just sort of makes the point kind of graphically that well control is the responsibility of Transocean, responsible, accountable for when things happen, not an area where we wait to see what the company man wants to do. Shut in the well, then seek advice.

Transocean's drill crew was aware that risks continued after a cement job was declared successful. In their well control handbook that they use throughout the world, they say wells have been lost due to improperly designed cement slurries and spacers. And as you were shown earlier, they drilled on this very issue two days before the event occurred.

There is never a time, Your Honor, in the life of the well when a driller or an assistant driller can let their guard down. They are to be always vigilant. This makes the point as well as could be said.

> **"QUESTION:** Is there every a time during the life of the well between drilling or temporary abandonment or some other stage of the well that you believe that you could pay less attention to monitoring a well?
>
> **"ANSWER:** No, not in my book."

That's the industry standard, Judge. If you

were to go up to a driller, find one coming in from offshore, and ask him it's okay -- is it okay for you to let your guard down, don't you let your guard down at certain times, they would be insulted by that. They understand it's their responsibility to continuously monitor the well. They all do.

Now, I want to turn to the sequence of events that led to the blowout. This slide is a little busy. You will be looking at a lot of these during the course of the trial, but I want to focus you now on the figure on the left where you can see the 2108 time and it shows 40 barrels of hydrocarbon influx by 2108. I want to describe for you what happened.

At 2052, they slowed the pumps a bit. We know from the post-incident modeling that at 2052, 8:52, the well began to flow. There is a very slight pressure increase that occurs, not detectable, we don't think, from 2052 to about 9:00. But then at 2101, something very significant happens, Your Honor. The drill pipe pressure reverses.

So what's happening in the well during this period of time is that mud in the riser is being displaced with seawater such that the pressure should be declining. This red number should be declining. So this is the period right here, 2101 to 2108. And during that period of time, there is a 100-psi increase.

This is a significant anomaly in the well.

There is agreement about this particular point from the experts. This is Billy Dean Ambrose, who conducted the Transocean investigation. We'll look at the top question.

"QUESTION: Perhaps the first indicator was at approximately 901 or 902, after establishing a constant pump rate, the drill pipe pressure begins to increase, which shouldn't have happened?"

And he acknowledges, yes, there's a slight increase, and then the next answer:

"ANSWER: With hindsight, we know that is a kick indication. We acknowledge he did not recognize that as a kick."

This is the expert of the United States. 2101 to 2108, circulation continued at a further reduced rate.

Look down below. The increasing trend is apparent on the full screen, 0 to 7500-psi Hitec display, proposed by Transocean -- this is in its internal investigation report -- and even on the 0 to 5000-psi scale, the anomalies needed to be investigated but tragically were not.

This is 9:01 to 9:08, a significant anomaly that should have been caught. We have a 40-barrel influx, twice a red zone kick. By this point in time, it's still another hour or so before there's going to be an explosion.

This is Joe Keith. He says if he had seen a 100-psi increase, he would have acknowledged that as

significant.

This shows what we have been talking about. By 9:08, 40 barrels had entered the well, and it talks about what's reasonable under the Transocean standards.

Now, a second very important event occurs at 2108. You have heard us discuss today that there was -- in the well, they're pumping out the spacer. And when the spacer comes back to the rig, what they do, Your Honor, is that they shut down the pumps to conduct what is known as a sheen test. Because if the spacer is back, then they can begin to discharge that fluid overboard. They turned the pumps off to do the sheen test.

Now, here's an important piece of -- important thing to understand about drilling. When the pumps are off, if you are not pumping anything into the hole, your pressure should not be increasing. It should not be changing in any way, but it certainly should not be increasing. So in this critical period of time when the pumps are off and nothing should be happening, there is a very significant anomaly that should have been detected by the crew but was not.

With the pumps off, the flow continues and the drill pipe pressure continued. It increased by over 250-psi. This was the second significant anomaly.

This is recognized by Billy Dean Ambrose and it's recognized by Richard Heenan. We will also have experts

that will testify to this. I wanted to show you what others are saying so that you can see that there is consensus that these are missed indications of a well flowing and that the well should be shut in.

Heenan says: "Very significant. The pump's off. This is an almost certain indicator of a kick."

Then we start to enter the crucial period of 2130, 2131, to the time of the blowout. By 2131, the crew has missed an approximately 300-barrel hydrocarbon influx. There is a massive kick under way at the Macondo well. It has not been detected.

At this point they do notice that there's differential pressure; that is, the pressure in the kill line and the pressure in the drill pipe are different. They send someone not to conduct a well control event but to bleed off the pressure. That's not good well control practice. You don't open the drill pipe if the well is flowing. It's not a well control step.

It's not too late to shut in the well, Your Honor. They have plenty of time now to shut in the well. They know there's an issue. What is demanded at this point and has been demanded at other points in time, but what is clearly demanded now is what's called a *flow check*.

This talks about the pumps being shut down at 9:30. And this is Calvin Barnhill, the expert for Transocean.

"**QUESTION:** It's your opinion that once the rig pumps were shut down at 2131, that a manual flow check followed by an immediate shut-in at the Macondo well should have occurred?

"**ANSWER:** Yes."

It only takes a minute, two minutes at the most, to shut in the well. They had the opportunity to do it here. Even Calvin Barnhill, Transocean's expert, acknowledges that this accident could have been averted if they had done this.

What is a flow check? What needs to be done? Heenan says the same thing. In the interest of time, I'm just going to keep going.

This is a drill shack. I'm just going to go right over to what needed to be done at this point in time, Your Honor. Coming over here, sitting in the drill shack, you are looking right there to the rotary table. All the driller has to do is either go out himself or send someone right to that rotary table with a flashlight. You look down the rotary table. At that point in time, the well would have been flowing. They would have known the well was flowing. All they had to do was shut it in.

The other thing that he can do right here at 2131 -- could have done it earlier, too -- 2131, he can pick up the phone, he can call a shaker hand, he can call someone and say, "Check for flow." If they do that, we are not here today.

This is a significant failure in well control, missing these three incidents.

Now, finally, at about 2141, the annular preventer is activated, but it fails to seal the well.

At 2147, the VBR has fully sealed the well. You can see that at 2149, you have a cumulative gain of 2,000 barrels.

The failure to shut in the well quickly in response to the kick and to shut it in safely was one of the contributing causes of the accident. Billy Dean Ambrose of Transocean affirms that. The driller must shut in the well if he has any doubt. Mr. Godwin has shared those with you.

If the anomalies of flow had been observed, interpreted correctly, and acted upon, the events of April 20th would have been avoided.

We have talked in a good bit of detail about the mud/gas separator. Your Honor, there are 14-inch pipes that are designed to take flow overboard in the event of emergency to allow well control activity to intervene and shut in the well. In this particular case, that panel is right in the driller's shack. The wrong diversion occurred. They sent the gas and the mud to the mud/gas separator, and that's what caused it to come back onto the rig and be an ignition source.

If they had followed their policy of any time there being rapid expansion of gas in the riser, the diverter

must be closed and the flow diverted overboard, we would have had a very different outcome than what we had.

So that's the well control sequence, and it's part of the reason that we are here today. It's not the only reason, but it's certainly a significant reason that we are here. Three significant anomalies were missed by the Transocean crew. We have the data available, the real-time data that was generated from the rig on that day.

We have heard from Transocean's counsel today that we don't know precisely what the men saw. We don't know precisely what they discussed. That's true because, unfortunately, they are deceased; and our sympathy is certainly with the families of those who lost loved ones. But it's clear that mistakes were made in the interpretation of the data and the failure to shut in the well, and there's agreement about that in the drilling community.

Now, why did the blowout preventer fail to shut in the well? Let me just walk through this quickly with Your Honor. This just basically shows the pictures that you have seen today. It is a massive piece of equipment. I think your Honor has been out to see it. It's really quite spectacular just to look at a blowout preventer, a very complicated piece of equipment. This shows the orientation of the preventers and the rams, and I think probably several of the parties will give you copies of things like this so you can

help follow what was activated and when.

This is what I want to focus on right here, which is the industry standard for the emergency systems. So there are four emergency systems that are associated with this BOP. There's an emergency disconnect, which can be activated from the bridge of the drill floor, designed to shear, seal the well, and disconnect the vessel from the well. This should have been activated. It would have saved lives. It would have saved people from injuries. It would have saved the environment. But it was not done in a timely fashion, as we have just seen in the well control system.

But there are backup systems that go with this BOP. The AMF/deadman closes the BSRs, the blind shear rams, when communication is lost with the rig. Closure time is 37 seconds. This is what I was referring to in my opening comments. When there was an explosion on the rig, the MUX cables, the communication cables from the rig that go down the riser to the BOP, were destroyed in the explosions. So communication between the rig and the BOP was lost.

Unfortunately, as we'll see in a second, there were maintenance issues that prevented this AMF/deadman from functioning, and I'm going to show your Honor what those were.

Then there's an auto shear function that actually can be done in a number of different ways, and there are ways to intervene with an ROV. And both of these

techniques were attempted.

It is Transocean's responsibility to maintain the well control equipment in accordance with good oilfield practices at all times and use reasonable means to control and prevent fires and blowouts. From the top of the company, Steve Newman, to the guy on the rig, Transocean recognizes that they are responsible for ensuring well control equipment could operate safely.

This BOP was approved by MMS for drilling operations -- I believe it was over 40 times. They looked at the configuration. They looked at the testing on it. They were very in tune to the capability of the BOP, and they approved it time after time.

Here's the time line that I hope will be helpful to Your Honor about the last few minutes before the explosions. The mud overflowed on to the rig at about 9:40. There was an annular closed on a tool joint. The tool joint was lodged in a place right in the upper annular -- you can see it there -- and did not allow for the closing-in of the well. The EDS, which is available on the bridge as well as in the drill shack, was not activated at this time. The EDS is the one that activates the blind shear ram, which actually cuts the pipe and allows it to drop down.

At 2142, the bridge notified the *Damon Bankston* to move away. Mud is falling down, raining down on the

Damon Bankston. They try to close a couple more VBRs. Still don't activate the EDS and close-in the well.

At 2149, we have explosions and that's what I have just described to you with the MUX cables severed.

The conditions of the AMF/deadman were met but did not work for these two issues. There was a solenoid on the yellow pod that was miswired. And as you can see in the bottom left there, where it says *Table 5*, there was a blue and yellow pod that -- a blue pod that had dead batteries.

Here's what we know about that: On February 16, 2010, Transocean was notified that Cameron recommended replacing those batteries after one year on time at operation. That is in the blue pod, Your Honor.

Here's a note, after they spent a couple weeks looking for the records: "The batteries in the SEMs have been replaced as follows: The last time the blue pod battery was replaced was November 2007" -- some 2 1/2 years before the incident. The No. 3 pod was the blue pod.

This shows the yellow pod. This was actually pulled up during the response in May, and they could not get the yellow pod to work. Later, they determined that it was this wiring issue that we are showing here.

Even more significant, Transocean did not test the AMF/deadman as it was required to do. So just one more issue here and then we will move on and talk about cement a

03:48 1 little bit.
03:48 2 As you can see here, the time line of events
03:48 3 begins around 2140, and this is what we just looked at. At
03:48 4 2155, Chris Pleasant comes to the bridge, and when he arrives
03:49 5 at the bridge, there's fire. The rig is burning. The captain
03:49 6 of the Transocean vessel has still not hit the EDS.
03:49 7 **"QUESTION:** When you went to the bridge, you informed
03:49 8 the captain that you were going to activate EDS?
03:49 9 **"ANSWER:** Yes.
03:49 10 **"QUESTION:** And he indicated he didn't want you to
03:49 11 activate EDS yet?
03:49 12 **"ANSWER:** That's correct."
03:49 13 Well, Chris Pleasant said, "To heck with that."
03:49 14 He hit the EDS button on the bridge, but it was too late. It
03:49 15 was too late because communication had been lost.
03:49 16 Captain Kuchta, as the master of the vessel, who was on the
03:49 17 bridge, did not take control of this situation and EDS when he
03:49 18 should have, and we will talk about that in the case.
03:49 19 Here's what caused the drill pipe to bend.
03:50 20 2255, the traveling block -- which is on the rig -- about
03:50 21 30 minutes after the explosion, falls. It's 190,000 pounds.
03:50 22 It drops about 27 feet. When it does, the downward force from
03:50 23 the falling traveling block buckles the drill pipe in the BOP.
03:50 24 This just shows you that. It tries to, anyway.
03:50 25 Then, on April 22, they were able to activate

03:50 the auto shear pin, and when they did, the drill pipe, as you
03:50 can see here, is now off-center because of the drop of the
03:50 traveling block and it did not fully shear the drill pipe. And
03:50 that's the last step in the BOP sequence.
03:51 Now let's turn to cement for just a few more
03:51 minutes. I think as -- I want you to have a thought about
03:51 Jesse Gagliano. We have talked about him a lot today. You
03:51 should think of him as a guy in a red coat in a sea of green.
03:51 He was a Halliburton account representative. He was assigned
03:51 to BP, and he worked in the BP offices. He didn't work at the
03:51 Halliburton offices. He was at BP and he was there for one
03:51 reason and one reason only and he describes it right here: "My
03:51 whole purpose for being with BP was to make cement
03:51 recommendations for BP.
03:51 We counted on Halliburton to use their
03:51 proprietary materials to suggest a formula that would work, to
03:52 test it in their labs, and to pump it in an appropriate way.
03:52 And there can be no dispute about that. Jesse Gagliano resided
03:52 and worked at our offices to give us advice about cement, to
03:52 tell us what would work.
03:52 We have talked about contract provisions today.
03:52 Jesse worked at BP as an independent contractor. We did not
03:52 exercise control, supervision, management, or direction as to
03:52 the method and manner of obtaining the results required. That
03:52 was up to Halliburton to do. The results that were required

was a foam cement that would work and we didn't get that.

This demonstrates how we were relying on Jesse Gagliano to tell us if a foam cement would work in this well. "Can we put cement across the zone to be perforated during completion?" This is our engineer writing to Jesse.

He tells us: "Yes. We have done this on several wells. This has been done in the past with success. We can do that."

This is Jesse's testimony about the Kodiak blend. There's been a lot of fussing and fighting in this case about who wanted to use the Kodiak blend. I just want it to be clear to Your Honor so when we get to it later. Jesse Gagliano said he had no concern with foaming the system that contained this chemical we are talking about, D-Air 3000. He recommended that system to BP, and he recommended the formula that was utilized for the Macondo cement. This was Jesse's recommendation straight across the board.

Now, you have seen that the formula that he suggested contained D-Air 3000. These are the executives of Halliburton talking about whether or not it's a good idea to put a defoamer in a foam cement and they say, to a person, "I would redesign the slurry without the D-Air 3000."

> **"QUESTION:** I'm asking you, though, does it concern you as a lab man that the D-Air was present in this recipe, even though Halliburton's best practices

recommended against having D-Air in a foam slurry recipe?

"**ANSWER:** Yes, it would concern me."

And Phyllis Stelly is: "I wouldn't have D-Air in that type slurry."

They have put an ingredient in there that does something different than the desired effect.

These are their manuals that they have internally where they say the defoamer should not be included -- it's done in red to make it quick -- in actual job designs. Avoid using dispersants or defoamer additives. Do not use defoamers, D-Air foamers. Why do they say that? These materials will destabilize the foam.

So this is the issue with Halliburton's proposed slurry, it has an ingredient that will not allow the cement to do what it's designed to do.

Now, this chart will probably make your head spin just a little bit and I apologize for that, but I think that this is something that will be helpful to all of us -- at least to me -- as we go through the case. There are a number of important points I would like to make about this chart so Your Honor has awareness of the testing that was done on the Halliburton cement slurry.

The four tests in gray at the top are pre-incident foam stability tests that were conducted by Halliburton. You're looking for two things -- two primary

things when you are looking at these test results, Your Honor. Do you see the second column which says "Foam Stability Test"? You want to see that the top -- the left number, 16.8, is the same as the right number, 17.6. If it's not, then your air is breaking out of the -- out of the foam. It's settling, and it's not stable. So you want to see that those two numbers are the same.

The other thing that you want to see is that you want to see that you're meeting your target density. So if you see at the top, you have 14.5 ppg is the target density.

They conduct a test on February 12, 16, 13, and 17; and in all of them, the result is unstable.

The middle column is a test that was designed to be conducted on April 18 on the actual slurry design that was pumped and we didn't know this until well after the event, but we know now that Halliburton never tested the foam cement that was pumped into the well. This is their -- from their press release. A foam stability test was not conducted on the 9-gallon formulation. They did not test the precise formula they pumped into the well.

Next, the three boxes at the bottom reflect the only tests that we know of that Halliburton has conducted since the incident. In the first one, Ronnie Morgan was requested to conduct a test using the Macondo formula. The slurry would not foam. Morgan destroyed the test because he was afraid they

would be misinterpreted by the lawyers.

They then said, Well, let's ramp it up a little bit. Let's change the conditioning time. And so you see here they changed the conditioning time for a couple of tests to three hours.

These tests, Your Honor, were also conducted in what they describe as being *on the side*. They claim that they're stable, but we don't have the cement and we don't have the results. We don't have anything from these tests.

Now, one important point: Three hours conditioning time that you see here that they employed to supposedly get a successful test result is not like the conditions on the rig. *Conditioning time* means taking the slurry and mixing it at a very high temperature. When you do that, it becomes thicker; and when it's thicker, it's more likely to be able to entrain or hold on to the air or the nitrogen.

On the rig, that doesn't happen. They don't heat it up on the rig. They don't condition it on the rig. It's basically mixed. There's a period of 15 or 20 minutes that it takes to get from the mixer to when it's pumped downhole when it's injected with nitrogen, but the conditions are not similar. We don't believe that the testing of the Halliburton cement demonstrates that it was stable.

What's the goal with foam cement? What you are

trying to do -- because you have a fragile formation -- is you are trying to create a cement slurry that will occupy the same volume but weigh less. That's the idea of injecting the nitrogen into the foam. But if it settles or if it breaks out, then your cement doesn't end up where it's intended. It doesn't end up where it's intended and you don't have a good cement job and that's what we believe happened here.

This relates to the April 13 and April 17 foam stability test and this is Glen Benge from the United States and he says clearly he likes to see a density closer to the design density. The April 17 test did not meet the Glen Benge standard for stability. This is an expert you will be hearing from.

If we go back to the April 17 test and we look, Your Honor, right here, you see the density is met, 15, 15. Those are comparable. That's a good thing, but what you have missed up here is your target density. And that's a significant difference in the context of this test, and that's why Mr. Benge says it doesn't meet the test.

Now, there's been lots of post-incident testing on cement, some tests with samples that were purchased commercially that were thought to be like the Halliburton samples, some with stock samples from Halliburton, and at least one test on a rig sample. You will have in evidence the results of these tests, and this describes here what these

different entities looked at.

The post-incident testing in all three categories of testing that I have just described do not demonstrate that the cement was stable. They do not.

This is the OTC test conducted for the JIT or the test results on the Macondo rig sample. You can see here a couple of significant findings. One, there's 6 milliliters of void space. I don't know how to say it other than that's a bad thing.

There's bubble breakout right here. So the cement that was tested is not going to occupy the volume in the well that is desired when the cement is pumped downhole.

We asked Jesse Gagliano:

"QUESTION: If you have an inherently unstable foam cement by design -- like we have here, the design itself rendered it unstable -- was there anything BP could do operationally to turn an unstable foam cement into a stable foam cement?

"ANSWER: I don't believe so."

Now, Your Honor has heard about a number of theories that have been advanced by Halliburton as to why it's just not possible that it was their cement; it had to be something else. I call it the ABCs, *anything but cement*.

What we see here is really the way the men interacted, not the way we argue about things here, but how the

men interacted. This is Jesse Gagliano saying:

"**QUESTION:** Before BP gave the green light to pump the foam cement job on the Macondo well, if there were any safety issues associated with that cement job, as the trusted adviser to the BP team, do you believe that the BP team could trust you to bring those safety issues to their attention if you were aware of them?"

"**ANSWER:** I would think they would. I would bring that to their attention."

Jesse Gagliano never said, don't pump this cement; the centralizers aren't right. Don't pump this cement; we haven't done full bottoms up. Don't pump this cement for any other reason.

He believed, based on what he knew about the cement and the job, that he had recommended something appropriate.

Here he says, on the issue of the centralizers, something you have already seen in an email and I would just like to focus you, for the sake of time, on the second question and answer.

"**QUESTION:** Isn't it a fact that you thought the only risk associated with channeling before the explosion was remedial work?

"**ANSWER:** Yes. I was concerned we would have to go back and perform remedial work. I did not consider

channeling a safety issue. It's a risk of remedial work after the fact."

This is not something they were looking at as something that was going to cause a blowout.

The same thing about this issue of full bottoms up. He did not consider that a safety risk. The decision to spot a heavy pill -- these are operational decisions, not safety. The decision not to run a CBL, didn't look at that as a safety risk.

Kim, would you pull up a couple of my responsive slides. I apologize. Just take it back to where I was. I'm sorry.

So just briefly on this, Your Honor, one of the things that we will be asking you to look at as you look at this case is there's a lot of background noise in the case about engineering decisions that were made by BP. In almost every case, the criticism is not well-founded. BP had good engineering reasons for making its decisions. BP was proceeding within the standard of care.

But in addition to that, one of the things you will be asked to decide, Your Honor, is: Well, I hear you on that criticism, Mr. Godwin, or I hear you on that criticism, Mr. Roy, but really was that causal? Did it have anything to do with the blowout?

And this is a good place to talk about this

04:08 particular issue. Because what we are showing here is,
04:08 Your Honor, the path of flow. This was determined by BP as
04:08 part of the internal investigation report that it did, and what
04:08 it shows is it has flow coming out of the reservoir. It goes
04:08 down and then up the shoe track, right up the casing. BP has
04:08 said from the beginning, in terms of understanding the
04:08 investigation, that this was the flow path.
04:08 Why is that important? Well, from the
04:08 beginning, Transocean has contended -- excuse me, Halliburton
04:08 has contended that flow was up this way, was up what's called
04:08 *the back side*. They have given a lot of different versions of
04:08 how they said the flow occurs. The cartoon that Mr. Godwin
04:08 showed today of the twisted-up pipe at the bottom, that's about
04:09 their sixth theory, just to be very honest about it. I won't
04:09 show you all of them today, but they have had lots of theories
04:09 on flow.
04:09 What they are designed to do is to say, "It
04:09 couldn't have been our cement because we poured a good cement
04:09 job. It could not have been this. So flow must have been this
04:09 way. Must have lifted off the casing hanger right here and
04:09 then gotten up into the well." That was their theory early on.
04:09 Unfortunately for them, the evidence didn't hold on that.
04:09 When the well was recovered -- that is, the
04:09 production casing was taken out and recovered, the one on the
04:09 right, the 13th, it's pristine. There's not a bit of damage to

this hanger casing, this well casing right here. No damage to it. Halliburton's theory that centralizers were causal was disproved by the work that was done establishing flow, because centralizers only matter if the flow is going up the back side.

In addition, on the left there was a production -- the production casing was perforated; that is, they were able to look outside the casing to the back side of the casing, and they could see -- they could test and determine there was no gas in the annulus, there was no gas on the outside. Again, further evidence that Halliburton's theory of flow up the back side caused by centralizers was not valid.

So they have offered some other things along the way. There's some intermediate steps between annulus flow and what they have shown you today.

But I just want to make this point. We have talked to Gene Beck, the Halliburton expert, and we asked him:

"QUESTION: Do you think that the placement of the centralizers was causal to the accident?

"ANSWER: No."

I want to step back now to some of the arguments that have been made about some of the BP conduct and just cover a couple of things here very quickly.

You were shown a couple of times an e-mail where John Guide is raising the issue about his authority and is he confused and is he getting along with David Sims. What we

haven't shown you yet and what I would like to just review quickly with you now is the rest of the story.

There was an e-mail where John Guide was frustrated with Sims. He was questioning his authority. But if you look at the entirety of the e-mail -- and we will show you this during the trial -- you will see that Sims and Guide work through it. Sims describes to Guide what his authority is. And the last e-mail, that you weren't shown, is that Guide says, after these issues are raised and he has clarity about it, he totally concurs: "I told him we will all work through it together."

And they did. They continued to work in a constructive way.

The language of *flying by the seat of the pants* was raised with Your Honor, and this is a note that was offered by John Guide. He leads the well-site leaders who are on the rig. He has been in communication with them, and he is describing here why he uses this language.

He said: "Earlier that morning I talked to Don Vidrine and asked him how things were going. And I had mentioned to him that I knew that there had been a lot of last-minute changes of equipment."

As I think Your Honor is aware, getting things to and from the rig is one of the primary responsibilities of the well-site leader, scheduling what's coming out on the

boats, what's going back on the boats, what's coming out on the helicopters. The well-site leaders were frustrated because there were changes being made to what was going out and what was coming back, and it was related to design issues. They wanted to do things more efficiently.

"So Don makes the point -- he is a man of very few words, very low key, just said to me, 'You know, keeping track of -- getting all the equipment and these people to the rigs, it sort of makes you feel like you're flying by the seat of your pants.'"

"I said: 'Well, I understand there's a lot of boat logistics,' and then just said, 'It's something we do all the time, and we'll get it done.'"

This was not a safety issue. This was not a "the rig is about to blow" issue. This is a well-site leader expressing to his well's team leader that he is frustrated about logistical issues, but it is not a safety issue, Your Honor.

"Who cares." This is the "who cares" statement that has been read to you several times. I would like to put this in context, especially focusing on the second paragraph.

This is from Cocales to Morel, and he says: "Who cares. It's done. End of story. We'll probably be fine. We'll get a good cement job."

And then he says: "I would rather have to

squeeze than get stuck above the wellhead. So Guide is right on the risk/reward equation."

What does that mean really? In the context of the centralizer issue, the centralizers can cause damage as they go down. If they do, you're out of service. Your BOP can be out of service. So one of the balancing issues that has to occur as an engineering decision is what's the risk of using the centralizers to the wellhead, to the BOP apparatus, versus do you need the centralizers downhole.

We know here centralizers were not causal. We also know here, Your Honor, that when Halliburton inputted the information to evaluate the OptiCem, they put the wrong information in. They didn't have the centralizers spaced right. They didn't use the right pore pressure. They didn't use the right centralizer diameter.

We will show you something in trial where the centralizers they modeled wouldn't touch the side of a wall. As a result of that, their prediction about a gas flow potential was too high.

THE COURT: You've got a different clock keeper than mine, but I will go with yours.

MR. BROCK: Let me just wrap up with this. M57B, Mr. Godwin said you are going to hear about that a lot in the case. Gene Beck, his expert, says:

"QUESTION: Do you believe M57B zone was causal of

the blowout?

"ANSWER: No."

I'll move on past this. Well, I guess I will just say this with my one minute left: One of the important issues here, as we understand it, is this issue of willful misconduct and gross negligence. These are very high standards. We do not believe that the men and women of BP acted in a way that demonstrates willful misconduct, that they were doing things voluntarily, intentionally, recklessly.

We do our jobs well. We hope we are able to get that over to you during the course of this trial. It was a multiparty, multicausal event. There are a number of different reasons that we have this horrific outcome, but the standards are very high.

If we look at the causes, if we just summarize why the blowout occurred, foam cement with defoamer was unstable, allowed the well to flow. The negative test was misinterpreted by the team on the rig. At least three indications of a kick were missed. They failed to divert overboard in a timely way. A massive 700-barrel inflow had occurred before any recognition that anything was going on. And we have the blowout preventer issues that we've talked about, including activation and maintenance.

So with that, Your Honor, I know I'm at the end of my time. I thank you. Our team and I, we look forward to

presenting our case to you over the next few weeks. Thank you.

THE COURT: Thank you, Mr. Brock.

For Cameron, Mr. Beck.

MR. BECK: May it please the Court. David Beck for Cameron International Corporation.

In 2001, more than 11 years ago, Cameron manufactured and sold the blowout preventer for use on the *Deepwater Horizon*. During the course of this evidence, Your Honor, you're going to learn, among other things, that Cameron was in fact the inventor of the blowout preventer back in the 1920s. And since that time, BOPs manufactured by Cameron have been used safely and effectively around the world to control kicks and to prevent blowouts.

As I stand here today, there are Cameron blowout preventers being used around the world by many companies, blowout preventers that are using the same model, the same technology and the same design as the blowout preventer on the *Deepwater Horizon*. And there's good reason for that. It's because, as we believe the evidence will show, the Cameron-designed blowout preventer on the *Deepwater Horizon* is a good and safe product. But a blowout preventer, just as the name suggests, is a blowout preventer. It is not a blowout stopper.

A BOP, as Your Honor has already heard, is designed to operate in response to a kick, and that is well

known in the oil and gas industry. Anyone with any involvement in drilling in the oil and gas industry understands full well that the key to effective well control is early kick detection and rapid response. Early kick detection and rapid response.

BP and Transocean certainly understood those two fundamental well control principles, as did almost everybody else in the industry. I refer Your Honor to simply two documents. One is the *Transocean Well Control Manual* and the second one -- if we may show it.

Here we go. It's the *Transocean Well Control Manual* and then we also have the *BP Well Control Manual*. If you look at what the Transocean document says, it says: "Early recognition of the warning signals and rapid shut-in are the key to effective well control."

And then if you look at BP's Well Control Manual, it says -- and I'm going to refer to the bottom, in the interest of time: "The blowout preventer must be closed immediately."

Then up above it says: "BP drilling and operations policy requires that the BOP be closed in the event a kick is detected or suspected."

Early kick detection, rapid response. But it's equally well understood, Your Honor, in the oil and gas industry that a kick must be detected and the well must be shut in with the BOP before you have a severe well condition.

04:22 Why is that? Because it's universally recognized, and as stated in Transocean's Well Control Handbook that under severe well conditions -- well control conditions, failure of ram packers can occur.

What are packers? Packers, Your Honor, are the rubber components in the blowout preventer that allow the blowout preventer to actually seal the well. If they are damaged or destroyed in any way, a BOP simply cannot seal the well.

We believe the evidence will show that on April 20, 2010, there was no early kick detection, there was no rapid response, and there was no attempt to activate timely the BOP to prevent the blowout. The evidence will show, we believe, that the BOP was not activated until after gas was actually above the BOP and after the well control situation was actually beyond severe. In other words, the blowout preventer was not activated until after the blowout had already occurred. Approximately 50 minutes elapsed, Your Honor, between the time the well began to flow and efforts to activate the blowout preventer.

Now, to put the severity of the Macondo incident into context, we have Transocean's well control statistics from 2005 through 2010. And Mr. Brian and Mr. Brock showed you something similar during their presentations.

Next slide, please.

These are the Transocean kicks from 2005 to 2010. During that time, Transocean rigs had 409 kicks. And the average kick volume before the well was brought under control was 10 barrels. Transocean policy -- and it's a good policy -- states that the failure to limit the kick to less than 20 barrels is less than ideal. 89 percent of its kicks were caught within this 20-barrel limit.

Kicks over 20 barrels are called *Code Red* because they are critical events. Transocean had 60 of those. All but five, excluding Macondo, were under 100 barrels, and the largest was 200 barrels.

What was the size of the kick on April 20, 2010, on the *Deepwater Horizon*? Your Honor, it was literally off the charts. Depending on whether you use BP's estimate or whether you use Transocean's estimate, the Macondo well flowed between 700 and 1,000 barrels before there was even an attempt to close the BOP.

We have a few demonstratives that we believe graphically show the enormity of what took place on the Macondo well and the *Deepwater Horizon* on April 20, 2010.

Next slide.

This represents the average volume kick based upon the history of Transocean.

Next we have the reasonable kick volume, which is 20.

Then the largest kick volume in the red zone, which is the critical area that I mentioned to Your Honor.

Well, what actually happened on the Macondo well?

Let's look at the next slide, please.

That's what happened on the Macondo well. So Your Honor can see the enormity of the volume before the blowout preventer was even activated.

How did the interested parties themselves view the conditions that occurred on the *Deepwater Horizon*?

Well, next slide, please.

When Transocean went before the national commission, the representative -- its representative testified that the event was like a 550-ton freight train hitting the rig floor, followed by a jet engine's worth of gas coming out of the rotary. That was Mr. Billy Ambrose, who's Transocean's drilling managing director, North American division.

But he also went on to say: "It's like snipping a fire hose with a pair of scissors. The blind shear rams were not designed for that."

We certainly agree with that.

Then he goes on to say: "And that jet engine of gas would have eroded away the rubber seals," the packers I mentioned to Your Honor earlier, "on the blind shear rams."

What about BP? What did they say in their

accident investigation report? In BP's accident investigation report, they discussed the fluid velocities that were ripping through the BOP when it was finally activated and was trying to close the well. It states that "According to OLGA well flow modeling, the fluid velocity through a leaking annular preventer could have reached levels that were orders of magnitude greater than drill pipe steel erosion velocity."

In other words, Your Honor, velocity that could actually cut steel.

We believe the evidence will show that by the time the BOP was activated under these severe and extreme conditions -- namely, a jet engine of gas moving at 10 times beyond steel erosion velocity -- it was simply too late for this BOP, or any BOP for that matter, to be effective. So that eventually when the blind shear rams were in fact activated, the extreme conditions in the well ripped apart the BOP packers, making the BOP unable to seal the well.

Everyone knew that could happen if the BOP was not activated timely, and no one in this industry can seriously claim otherwise.

Let me mention briefly off-centered drill pipe. You have already heard references to off-center drill pipe; that is, the drill pipe being forced over the side of the blowout preventer so that the blind shear rams could not shear the drill pipe and seal the well.

When you listen to these witnesses who talk about off-centered drill pipe -- and they're principally experts -- respectfully, Your Honor, I ask you to keep two things in mind: First, no two experts can agree on how that pipe supposedly got to the side of the BOP. But every one of their theories about how the drill pipe did get to the side of the BOP depends upon extreme and unprecedented conditions and forces, conditions we believe that show that those packers would have been damaged regardless of the position of the drill pipe.

The second thing we respectfully ask Your Honor to keep in mind is that none of these experts can say that any reasonable alternative ram design would have made any difference at all under these unprecedented conditions on April 20, 2010. No BOP ram could have sheared the drill pipe and sealed the well under these conditions. And with respect to Cameron's potential liability, that's key. If there's no reasonable alternative design available at the time, back in 2001, there can be no design defect.

Let me say in a minute or so about the BOP control system. You will also hear evidence about the BOP control system and the batteries used to operate the automatic mode function, or deadman system. That, we believe, is a fight among others. And that's basically all we are going to say about that other than to say the system was state-of-the-art at

the time in 2001 and that the evidence will confirm that the system operated, everybody knew how the system operated, and they knew the system's limitations.

To use the words of Cameron's customer, Transocean, the BOP control system is a, quote, quality product, end quote, and that's Mr. Geoff Boughton.

But no discussion about controls can change the fact that there was no attempt to close the blowout preventer until after the accident had occurred. Like the brakes on your automobile, it does no good to apply your brakes after an accident, which brings me back to where I began.

The parties in this case all understood that this Cameron-designed BOP was used successfully for a decade to control kicks on the *Deepwater Horizon*, including a kick, Your Honor, six weeks before this incident. Everybody knew this was a blowout preventer, not a blowout stopper.

Then finally, next-to-the-last slide, this is what BP's key person dealing with blowout preventers said. He was the one that was assigned to the BP accident investigation team and principally the blowout preventer. What his notes say: Blowout preventer, not blowout stopper.

Transocean knew it, as you will see from this testimony, which takes just 30 seconds, if I may play it, Your Honor, and then I'm finished.

This is Mr. Boughton again.

"**QUESTION:** While you were working at Michoud, did you tell representatives of Cameron that it was your view that a BOP is a blowout preventer, not a blowout stopper?

"**ANSWER:** Yes.

"**QUESTION:** That's a view that you hold?

"**ANSWER:** Yes.

"**QUESTION:** It's a view that you held prior to April 20, 2010?

"**ANSWER:** Yes."

MR. BECK: Thank you, Your Honor.

THE COURT: Thank you.

M-I.

MR. TANNER: May it please the Court. Good afternoon, Your Honor. I'm Hugh Tanner, with the firm of Morgan Lewis & Bockius, and I'm here today representing in a very honored the way the men and women of M-I SWACO.

M-I SWACO, which I will refer to you in my opening statement today, was the drilling fluids contractor that worked on the Macondo well, the *Deepwater Horizon* rig. Now, in the world of oil and gas exploration, drilling fluids are often referred to as *drilling mud*. Therefore, during the course of this litigation, you'll probably come to know my client, M-I, not as the drilling fluids contractor, but as the mud company.

In the same vein, we have some very dedicated

04:33 individuals who've worked on the *Deepwater Horizon* rig, whose
04:33 job -- their employment title is drilling fluids contractor --
04:34 I mean, drilling fluid specialist. Similarly, in that same
04:34 vein, over the course of this case, you will probably come to
04:34 know them not as drilling fluid specialists, but as mud
04:34 engineers.
04:34 During this trial, Your Honor, you will learn
04:34 that the primary job performed by a mud company on a drilling
04:34 rig is to supply the specific drilling fluids ordered by the
04:34 operator, in this case BP, and then maintain those drilling
04:34 fluids in the condition and at the weight specified by the
04:34 operator. That's it. That's the role of a mud company.
04:34 Indeed, you will learn that a mud company does
04:34 not mix, it does not combine, it doesn't even open the sacks
04:34 that contain the ingredients, the mud, the spacers, the LCMs
04:34 and the other fluids it supplies. What's more, it will be
04:34 shown a mud company also does not pump those drilling fluids
04:34 into the well in which they are used. Rather, you will come to
04:35 know that those tasks are performed by the drilling contractor.
04:35 In addition, over the course of this proceeding,
04:35 Your Honor, you will hear from industry veterans that a mud
04:35 company does not design, conduct, or interpret negative tests.
04:35 A mud company does not design displacement procedures. A mud
04:35 company does not play a role in well control. It does not open
04:35 or close valves on the rig, and it does not read or monitor rig

gauges.

Further, Your Honor, you will learn that a mud company does not operate any pumps on the rig; does not move any mud between the pits or on the rig; does not measure or strike, as they refer to it, any fluids in those pits; and does not dump or empty any trip tanks. Instead, you will learn that those tasks I just listed, some of which were the focus of the opening statements earlier here today, were performed by the operator, the drilling contractor, or another contractor.

You will also be shown at trial, Your Honor, that M-I entered into a contract with BP that governed M-I's provision of its drilling fluids and attendant services in accordance with the scope of the work dictated by the operator and at the specific direction of the operator.

Our people, Your Honor. On the day of the blowout, M-I was not simply a mud company working on board the *Deepwater Horizon* rig. No, that would not be a fair characterization by any means or by any measure. Rather, the Court will learn that on that day, M-I was five experienced and dedicated men: Gordon Jones, Blair Manuel, Leo Lindner, Greg Meche, and John Quebodeaux.

Tragically, two of our men, Gordon Jones and Blair Manuel, lost their lives that day. Two others, Greg Meche and Leo Lindner, received injuries in the blast. Indeed, only one of the men for whom M-I was personified that day on

the *Deepwater Horizon* rig, John Quebodeaux, escaped without injury.

So today when I stand before this Court in representation of the mud company, M-I, I stand here, too, for our mud engineers, the members of the M-I family working on board the *Deepwater Horizon* that day: Gordon, Blair, Leo, Greg, and John. It is in that representation of those men and that company that I rise to make clear the record to be shown to this Court regarding the work they performed.

Your Honor, being the last of six hours, or I guess six hours and 10 minutes, we have now listened to those opening statements in which counsel for each of the parties rose to detail the evidence they contend will be presented to the Court during trial. However, over the course of those opening statements, in stark contrast to many of the other defendants, or really the other defendants in total, the name of my client, M-I, was mentioned one time in the six hours. And there's good reason.

M-I, as Your Honor will learn, had a distinctly -- had and occupied a distinctly different, limited role on the *Deepwater Horizon* rig that in no way could have caused or contributed to the tragedy that ensued.

Abundantly clear from the opening statements this day is the inescapable conclusion that the interpretation of the negative test forms a central focus of this litigation.

04:38 Of significance, Your Honor, however, to M-I, is the parties to
04:38 this litigation have all agreed that M-I played no role in the
04:38 negative pressure test conducted on the Macondo well. Indeed,
04:38 in agreed stipulations filed with this Court, the parties
04:38 stipulated and agreed that M-I personnel had no responsibility
04:39 for determining whether BP would conduct a negative test during
04:39 displacement. Moreover, the parties have stipulated and agreed
04:39 that no M-I personnel were responsible for conducting or
04:39 interpreting the negative pressure test on April 20, 2010.
04:39 In addition to discussions today surrounding the
04:39 negative pressure test, Your Honor was also presented with
04:39 statements during opening regarding the propriety of the well
04:39 control responsibilities exercised on the Macondo well. Once
04:39 again, of significance to M-I, the parties to this litigation
04:39 have stipulated and agreed that no M-I personnel were
04:39 responsible for monitoring the Macondo well for well control
04:39 purposes on the *Deepwater Horizon*. Nor could they have been,
04:39 Your Honor.
04:39 As you will hear at trial, M-I fluid specialists
04:39 are not trained in well control, since they play no role in the
04:39 execution of that very critical task. Indeed, as I said
04:40 earlier, the role of the fluid specialist, Your Honor will come
04:40 to learn, is to supply and maintain the drilling fluids.
04:40 There was also discussion in opening statements
04:40 today, Your Honor, regarding the use during displacement of

spacers. As Your Honor will hear during the course of the trial, a spacer is quite simply nothing more than a fluid that is used to separate two -- or create space between two otherwise incompatible fluids. On the *Deepwater Horizon*, the two incompatible fluids were seawater and drilling mud.

You will hear from drilling fluid experts that the LCM spacer used in the Macondo well was well suited in its composition and in its volume. Furthermore, once again, the parties to this case and each and all have acknowledged that BP approved the two LCM pills and the spacer used during the displacement of the Macondo well to seawater.

In one of the opening statements this morning, Your Honor, counsel intimated that the presence of spacer during displacement could have affected the kill line pressure flow -- or the kill line pressure or flow during the negative pressure test and, therefore, in some manner, confused the interpretation of the negative pressure test. To that point, once again, each and every party to this litigation has stipulated and agreed that the reason for the zero pressure on the kill line during a negative pressure test has not been definitively established. Indeed, during the course of the trial, Your Honor, you will be offered testimony that the zero pressure reading on the kill line could have been caused by any number of factors, including a forgotten closed kill line valve.

04:42 In addition, Your Honor, you've heard in opening statements today from others and will hear again during trial that there was in fact no confusion at all. The results of the data gathered during the negative pressure test unequivocally revealed a failed test and, therefore, a definite lack of well integrity. Your Honor will hear testimony from veteran oil and gas professionals, each experts in their field, that the presence of pressure on the drill pipe alone mandated the declaration of a failed test. Further confirmation will be coming in the form of evidence that often will be offered, that a buildup of pressure on the drill pipe as well in a shut-in -- in a system that otherwise was deemed to be shut in serves only to confirm the lack of well integrity and thus, again, a failed negative test.

Your Honor, M-I feels very strongly that the agreed stipulations in this case made clear that no action attributable to M-I could in any manner be considered a producing cause of the blowout or the subsequent hydrocarbon release, much less -- as was suggested this morning -- provide any support whatsoever for a finding of gross negligence.

Thank you very much. We appreciate your time, Your Honor.

THE COURT: Thank you, Mr. Tanner.

All right. We are going to recess in a minute. I want to ask a couple things, first of all.

The plaintiffs still intend to call Dr. Bea as your first witness tomorrow?

MR. CUNNINGHAM: Yes, Your Honor.

THE COURT: What's the anticipated length of his testimony?

MR. CUNNINGHAM: I'm guessing in the hour-and-a-half range.

THE COURT: You're talking about direct?

MR. CUNNINGHAM: Yes, sir.

THE COURT: Then your next witness after him would be who?

MR. CUNNINGHAM: Mr. McKay.

THE COURT: Someone had raised the issue earlier today about sequestration of witnesses. Is there a motion by someone to do that?

MR. STERBCOW: Yes, Your Honor, the PSC so moves.

THE COURT: I'm going to order and instruct counsel to advise all of their witnesses that they should not enter the courtroom until they are called to testify; that further, they should not discuss their testimony with anyone either before or after they testify except for counsel, of course. They are free to discuss their testimony with any of the lawyers in the case, if they choose to do so. So I would appreciate it if everyone gives --

MR. UNDERHILL: For clarification, Your Honor, would

the sequestration order include expert witnesses as well as percipients?

THE COURT: No. Expert witnesses can stay in the courtroom, and any representative of a party, of course, can stay in. Any other witnesses -- obviously I don't know who the witnesses are, so I'm going to depend on you-all to instruct your witnesses and make sure they don't enter the courtroom inadvertently.

MR. CUNNINGHAM: That would include the extensions of this courtroom that exist?

THE COURT: Yes, of course, the overflow rooms, too. When I say "the courtroom," anywhere they could hear the testimony. Thank you.

Anybody have anything else? Everyone have a good evening. We will resume at 8:00 in the morning.

THE DEPUTY CLERK: All rise.

(Proceedings adjourned.)

* * *

CERTIFICATE

I, Toni Doyle Tusa, CCR, FCRR, Official Court Reporter for the United States District Court, Eastern District of Louisiana, do hereby certify that the foregoing is a true and correct transcript, to the best of my ability and understanding, from the record of the proceedings in the above-entitled matter.

s/ Toni Doyle Tusa
Toni Doyle Tusa, CCR, FCRR
Official Court Reporter